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Editorial.

A SPECTRE.

MR. HUNTING is evidently terribly afraid. He beats his drum and shouts aloud, but it is quite clear that a quaking terror has taken possession of his innocent soul. He tries to be brave. He talks about the "little agitation in our profession," and would gladly pooh-pooh it, but we can see all the time that the agitation which he would fain belittle looms very large on his horizon. At the end of his address he lets the truth escape—it comes blurting out. "I don't like the University connections, because I fear"—there it is at last—"I fear that our independence is at stake." This is Mr. Hunting's rallying cry to the faithful remnant. Then comes a further and final attempt to be brave in presence of the spectre, which he affects to believe is only a man with a sheet over his head. "I suppose I ought to be proud of a University connection, but I am not. I prefer the isolation, the independence, and the specialisation afforded by good schools." Let every man hold his own opinions, say we, but it does seem strange to thank heaven for isolation in the scientific world. We wonder also if a school can be called good which affords isolation.

Mixed with all this bluster there is a good deal of spite and personal malignity. "Most of us looked forward to the time when only one school in each division of the kingdom would allow the survivors a financial existence." This somewhat oracular utterance is believed to signify Mr. Hunting's opinion that three colleges, and three colleges only, are required to bring about the veterinary millennium. Not only—let it be noted, however,—must we observe the sacred number three, but we must take care to distribute these three colleges, one in England, one in Scotland, and one in Ireland. Had such bliss been granted to us, "we should have wanted no University assistance." Just think of that! "The starvation of our schools has been noted with grief," says this saintly man, and yet, when replying to the discussion, he seems to revel in the thought that "if things were allowed to go on as they might, the ordinary law of supply and demand would have weeded out one school and another, and they would have had three schools left." We regret we cannot find room for the printing of the discussion which took place after the reading of Mr.

Hunting's paper at the meeting of the Southern Counties Society, but doubtless our readers have already perused this in Mr. Hunting's own journal. We would merely point out the fine Christian spirit which animates his utterances, and the delicacy of feeling indicated by the word "weeding."

We wonder at the process of reasoning which enables Mr. Hunting to arrive at the conclusion that there would necessarily be three colleges, or would have been but for this violent interference by Liverpool with the processes of nature. There is something cabalistic in the constantly occurring trinity, but we are not satisfied. We have, we confess, an uneasy—perhaps an ungenerous—suspicion that Mr. Hunting is talking with his tongue in his cheek every now and then, and that his real hope was to see his pet institution at Camden Town left sole mistress of the veterinary situation in Great Britain. As for Ireland, he may have thought that she did not count for much. We took pains a short time ago to prick this silly bubble of a college for each division of the British Isles, but apparently Mr. Hunting has managed to inflate it again. Can it be that he was trading on the geographic ignorance of his hearers? If so, we pity him when they realise the chaffing—to use no stronger word—to which they have been subjected. Let any one look at the map of Great Britain and Ireland; let him compare the area of England with that of Scotland; let him observe how wild and mountainous a great part of Scotland is, and how few and scattered are the habitations of men over a large tract of the country. Let him then examine the figures which give the population of the various divisions; let him learn that Scotland has a population about the same as that of London alone, that against the English population of thirty-two millions or so she can place only a scanty four and a half millions, and that Ireland is a trifle less populous than Scotland. Let any honest man realise these facts, and he will at once say that Mr. Hunting's sacred three colleges should *all* be placed in England. Had this country been ruled by a furious despot like Nicholas I. of Russia instead of by a mild-mannered sovereign like King Edward, and had that despot been asked years and years ago where he wished the veterinary colleges to be placed, he would unhesitatingly have given one to Liverpool. That city is in the midst of an enormous population; it is, as we ventured to say before, practically the capital of Wales, and it is an excellent landing-place for our Irish kinsmen. No despot could have overlooked the claims of Liverpool without being in constant terror of a revolution; our benevolent and wise monarch has recognised the propriety of giving his approval to the new scheme.

Mr. Hunting is one of the leaders of the profession, and he is besides accustomed to literary composition, and therefore everything that he says must be listened to with decorous submission. Admitting all this, however, we must honestly say that anything

more rambling and incoherent than his address to the Southern Counties Society we have rarely met. It may be that Mr. Hunting, being a learned man and one exercising authority, is permitted—it may be compelled—to talk and write in an oracular fashion. We know further that, to take one instance, the Delphic oracle was always difficult to understand, and sometimes quite enigmatical. Profane people used to say that the oracular responses were so framed that they could be read in two ways in order to be quite safe, so that the military leader, for instance, who wanted to know if he would be victorious in the expedition which he meditated was often deluded; he read the response as favourable, but when he was beaten and wished to curse the oracle he was politely informed that he had made a little mistake—he had overlooked a seemingly unimportant word which had been very adroitly introduced. We do not for a moment question Mr. Hunting's good faith, but his paper unquestionably presents what Mrs. Malaprop calls "a fine confusion of epitaphs." At one moment Mr. Hunting is philosophic; at the next he is diffuse and talks common-place, if not twaddle; then he becomes mysterious, and, after that, vindictive, so that it is very difficult to follow him. It almost seems as if, being in a great hurry to prepare an address, he had hastily jotted down a few ideas as they occurred to him without sufficiently regarding their coherence or their continuity. We are told twice in the course of some sixty lines that naval and military officers have their own special schools, and that agriculture and engineering are only partially provided for at a University. And the terrible thing is that Mr. Hunting, while pretending to discuss University affairs, admits, first, that he has no special knowledge of University education, and afterwards that he has approached the subject with some prejudice. We think this is scarcely the right frame of mind for one who professes to guide public opinion.

Mr. Hunting complains that the chairs in the Veterinary Department of Liverpool University are filled by others than veterinary surgeons, but whose fault is that? Few men who obtain the degree of M.R.C.V.S. have time or opportunity to specialise. There is no objection to their doing so if they like, and in fact we should be only too delighted if members of the profession would do so, but our hope is not very great. Let us outline the career of many, of very many, professors in our Universities. As students they show a special aptitude in some particular branch of study, and are specially noted by their teachers. After qualifying they perhaps obtain a research scholarship and proceed to specialise, and in course of time may receive a junior appointment in the laboratory of a professor. They may then become demonstrators, then lecturers, and finally they reach a professorship; they, in fact, serve a long apprenticeship. It very seldom occurs that a senior man in ordinary practice is elected to a professorship in any subject but

those which have to do with every-day practice. Does Mr. Hunting think that any one who has not gone through all these stages is qualified to become a teacher, that a man can without difficulty step from the field to the dissecting room or laboratory and give a satisfying lecture? There is nothing, of course, to prevent a veterinary student who begins his career this winter at Liverpool from blossoming into a professor some day, because now many difficulties and obstructions that formerly beset his path have been by the foresight and generosity of the Liverpool authorities completely removed. Besides all this, it is idle to talk of *veterinary* chemistry, *veterinary* physiology, and so on. Quite true we have to make a special study of our own branch after a bit, but the elements and principles are the same everywhere, and our young people are all the better for getting a thorough grasp of these before specialising. The greatest bacteriologist of the world was Pasteur, a chemist; the greatest veterinary pathologist is Koch, a medical man. Mr. Hunting is, we fear, obscurant and reactionary. Had he been born in another sphere of life he would have made a splendid trade unionist; had he lived three hundred years ago he might have sat on the Holy Inquisition.

But even for Mr. Hunting there are some crumbs of comfort. There is now a Professorship of Veterinary Medicine and Surgery in Liverpool University, and this Chair is scarcely ever likely to be held by any one but a veterinary surgeon. There is also a Lectureship of Veterinary Anatomy; comparative pathology is taught jointly by a veterinary and a medical teacher. There are seven veterinary surgeons who teach in the Liverpool School, and the subjects taught by them are just the subjects which are usually and rationally supposed to belong to the particular province of veterinary surgeons—namely, Principles of Veterinary Medicine and Surgery, Canine Medicine and Surgery, Clinical Medicine and Surgery, Comparative Pathology, Bacteriology and Helminthology, Materia Medica and Pharmacy, Veterinary Anatomy, Dietetics, Hygiene, Meat and Market Inspection, Stable Inspection and Management, Horse-Shoeing, Obstetrics.

We feel unable for the task of discussing Mr. Hunting's general views on education. He is like Proteus of old, and eludes our grasp at every moment; whether he touches on mediæval or modern university life he is alike vague—may we say hazy? But what we do say is this: let Mr. Hunting come to Liverpool and see the "brand-new" school that seems to have caused him such unholy alarm; he will be received with courtesy and respect as one of the leading men of the veterinary profession, and he will see and hear many things that will reassure him and delight his righteous soul. There are only honest skeletons in our closets; there are no spectres to be met in our corridors.

Royal College of Veterinary Surgeons.

A QUARTERLY MEETING OF COUNCIL was held at the College, 10 Red Lion Square, W.C., on Friday, October 7th, 1904, Mr. J. A. W. Dollar, President, occupying the Chair. The following Members of Council were present:—Messrs. Abson, Banham, Barrett, Bower, Carter, Cope, Colonel Duck, Fraser, Garnett, Hunter, Lawson, Locke, Mason, M'Fadyean, M'Kinna, Mettam, Mulvey, Over, Penberthy, Shipley, Simpson, Thompson, Villar, Owen Williams, and Wragg, Mr. Thatcher (Solicitor), Mr. Hill (Secretary).

ABSENTEES.

Letters regretting inability to attend the meeting were received from Messrs. Allen, Dewar, M'Call, and Trigger.

MINUTES.

On the motion of Mr. LAWSON, seconded by Mr. MULVEY, the minutes of the last meeting were taken as read, and confirmed.

Professor METTAM.—There is a clerical error on page 3 of the minutes to which I should like to call attention.

The PRESIDENT.—I am very sorry, but the minutes have already been confirmed, so that they cannot be amended now.

Professor METTAM.—As it is printed at present it stultifies the whole case, because it says that 19 voted for and 17 against a particular amendment, and that gives a total greater in number than the Council consists of.

The PRESIDENT.—I am very sorry that this was not brought to our notice before. I take it that no objection will be offered by the Members of the Council to the correction of that error, even though the notice of confirmation has been carried?

It was unanimously agreed that the words "19 voting for and 17 against" should be deleted from the minutes on page 3.

OBITUARY.

The SECRETARY read the Obituary List.

The PRESIDENT.—I may say, gentlemen, in regard to the very greatly regretted death of Professor Simonds, that I took on myself to address to Miss Simonds a letter of condolence, and to send a wreath on the occasion of the funeral. To that I have received a letter of acknowledgment, but I think probably some of the older members of the Council, who had the privilege and great advantage of the personal friendship and knowledge of Professor Simonds, may on this occasion wish to say a few words in regard to the great loss which the profession hes sustained.

Mr. MULVEY.—Gentlemen, it would be impossible for the members of this Council to allow the death of Professor Simonds to pass without an expression of their grief for his loss and their appreciation of the great part he played in our profession. I therefore move that a vote of condolence be sent from this Council to the members of his family. He was, as we well know, a very representative man. He held the highest positions in the profession. He was esteemed by those who had the honour and privilege to sit under him as students, and in his day he was acknowledged to be

the first veterinarian in the kingdom. I beg to move that a vote of condolence be sent to his family.

Mr. HUNTER.—As an old pupil of Professor Simonds I beg leave to second the proposal. I had the privilege of being a pupil under Professor Simonds, who was very highly esteemed both by the pupils and every one who was brought into contact with him. I fully endorse all that Mr. Mulvey has said.

The resolution was then carried in silence, all the members of the Council upstanding.

PRESENTATION TO THE LIBRARY.

The SECRETARY announced that the following presentations had been made to the Library since the last meeting:—*The Veterinary Journal* for three months; *The Veterinary Record* (bound volume); *The Veterinary News* for three months, from the Editors; *The Rhodesian Agricultural Journal*, Vol. II., No. 1; "Annual Report of the Veterinary Surgeons to the Corporation of the City of Glasgow, 1903"; "The Horse" (with a Treatise on Draught), presented by A. Welch; "Veterinary Materia Medica and Therapeutics," by Symonds and Mills, (1903); "Tuberculosis in Dairy Cows," presented by J. M'Phail, M.R.C.V.S.; "Diseases of the Mammary Gland," by Colonel J. A. Nunn; "A Treatise on Epizootic Lymphangitis," by Captain W. A. Pallin; "Journal of Sanitary Institute," by the Editor.

On the motion of Mr. VILLAR, seconded by General THOMPSON, a vote of thanks was accorded to the several donors.

PRESENTATION OF PORTRAIT OF PRINCIPAL M'CALL.

Mr. LOCKE.—I claim the indulgence of the Council for the purpose of asking if you will kindly alter the ordinary course of proceedings. As you are aware, we have no Standing Orders with regard to procedure, but we have arrangements made for properly carrying out our meetings. There is a deputation waiting downstairs, and they want to make a presentation to the Council; and if you will allow them to do so at the present time I shall be pleased to move that we adopt that course of procedure.

Mr. LAWSON.—I have great pleasure in seconding that. (Agreed to.)

Major Marriott, Mr. Richard Hughes, and Mr. Laithwood then entered the Council Chamber, and were introduced to the President and Members of Council by Mr. LOCKE. He said—Mr. President and Gentlemen, I have very great pleasure in introducing to you a deputation who have come here to do honour to one of our associates, Professor James M'Call. —(Hear, hear.) I am sure you will all feel very pleased indeed to know that we wish to present to this College a portrait of that gentleman.—(Hear, hear.) I am very pleased indeed to associate myself with this deputation, and also to associate myself with the sentiments expressed on the panel of the portrait in regard to the virtues of our friend, Professor M'Call. I have great pleasure in introducing to you Major Marriott, Mr. Richard Hughes, and Mr. Laithwood, who will each say a few words in making the presentation.—(Hear, hear.)

Major MARRIOTT, who was received with cheers, said—Mr. President and Gentlemen of the Council, I have been asked to present the portrait of our esteemed friend and colleague, Professor M'Call, to the Council of

the Royal College of Veterinary Surgeons. This is a very pleasant duty, but I much regret that I am unable to do justice to it. However, I hope that all errors of omission and commission will be promptly rectified by the other members of the deputation. The idea of a painting originated at a meeting of the Central Veterinary Medical Association held in this room, where already the portraits of some of the most eminent members adorn the walls. After consultation with a few friends, a Committee was formed, circulars were sent to every qualified member, and so liberally did they respond, from all parts of the world, that we were at once enabled to place the commission in the hands of the leading portrait painter of the day. The presentation of this portrait not only testifies to his abilities as a teacher, but shows universal esteem, admiration, and gratitude for the life-long labours of one who has so materially advanced veterinary science.—(Hear, hear.) In conclusion, Mr. President and Gentlemen of the Council, on behalf the subscribers, I present you with the portrait of Professor James M'Call, a brilliant teacher and practitioner, a good sportsman, the kindest and best friend a student could possibly have.—(Cheers.)

Mr. RICHARD HUGHES.—Mr. President and Gentlemen, I heartily endorse every word that has been said by Major Marriott. I am sure this is a very happy event, especially to us who were students and have had the benefit of Professor M'Call's teaching, knowing that he has been such an indefatigable worker for the advancement of the profession, and also that he had been such a successful professor. The idea of presenting a a portrait was a very good one, and was promptly responded to.—(Cheers.)

Mr. LAITHWOOD.—Mr. President and Gentlemen, I think you will admit that there is nothing left for me to say except to support what has been already said by Major Marriott and Mr. Hughes. I am sure there will be no hesitation on your part to accept the portrait of a man so well known and thoroughly esteemed as our friend Professor M'Call.—(Hear, hear.) He is, as every one knows, and has been all his life, an ornament to the profession; and it is only right, I think, that his portrait should be an ornament to the walls of your Council Chamber and an heirloom to our profession.—(Cheers.)

The portrait was then unveiled and formally presented to the President. It is of three-quarter length, and represents Professor M'Call standing in the characteristic attitude he adopts in addressing his students, his left hand resting on the skull of a horse. The portrait was painted by Mr. Francis Barraud, and carries the following inscription:—

"JAMES M'CALL, F.R.C.V.S.,
Founder and Principal of the Glasgow Veterinary College.
Presented to the Council of the Royal College of Veterinary Surgeons
by Graduates of the Glasgow and other Veterinary Colleges,
As a token of Esteem and Appreciation.
7th October 1904."

The PRESIDENT, in acknowledging the presentation, said—Major Marriott, Mr. Hughes, and Mr. Laithwood, on behalf of the Council I beg to return you our most sincere thanks for this munificent gift by so accomplished an artist as it evidently has been produced by. Not only will it be a great ornament to our Council Chamber, but it will, I trust, or many years serve to form a rallying point for the numerous friends

whom Professor M'Call has always had, both in the Council and in the profession, and I hope, moreover, that, differing from some of the presentations which have been made to us at times, it may not mark the retirement of an active member from his profession, but that it may be merely an emblem to remind us of the existence of one who still takes an active and a potent part in our deliberations in this Chamber and in the greater world without. I feel sure that in accepting for the Council and on behalf of the profession this noble gift which you have so kindly made to-day, I shall be doing an act which shall meet with universal acceptance; for although in this profession of ours the incessant activity and great intellectual effort which is continually going on must necessarily at times raise active strife, I think that Professor M'Call, despite the numerous additions he has made to our knowledge, and the great work he has done for our good and our advancement throughout his career, has been unique in one respect, namely, that he has been able to carry out all these varied and multifarious efforts without making a single enemy.—(Hear, hear.) This is a respect, I believe, in which he stands unique in the whole profession; and whatever the fate may be which the future has in store for him, I feel sure that that will always be the feature by which he will live in the memories not only of the present generation but of his older friends, many of whom are still spared to see this great honour done to him to-day. In the name, therefore, gentlemen, of the Council and of the whole profession I beg most sincerely to thank you for the efforts which have culminated in this ceremony to-day. (Cheers.)

The deputation then withdrew, and the Council proceeded with its ordinary business.

REPORTS FROM THE PRESIDENT ON THE RECENT PUBLIC HEALTH CONGRESS AT FOLKESTONE AND SANITARY CONGRESS AT GLASGOW.

The PRESIDENT.—I notice that the next item on the agenda is to receive reports from the President on the recent Public Health Congress at Folkestone and the Sanitary Congress at Glasgow. There is such a large amount of business to do to-day, and really these different Congresses have been reported at such length, and been commented on from all sides so lavishly, that I feel it would be inopportune on my part to present you with any lengthened report.—(Hear, hear.) I therefore content myself with intimating to the Council that, in accordance with the arrangements entered into, I attended at the Folkestone Congress on July 21st, and on the two subsequent days, representing there the College, and taking some small part in the proceedings, and that I attended the meeting of the Sanitary Congress held at the University of Glasgow from July 25th till July 30th, in accordance with the wish of the Council. I need scarcely say more; I think every member here has probably read how the proceedings went on, and it is perhaps scarcely desirable for me to add anything further to that. I will therefore, with your permission, proceed to the next item of business.—(Hear, hear.)

Mr. LOCKE.—Before we proceed to the next business, I should like to say that Major Marriott wishes to have the opinion of the Council with regard to the skull that has been painted on the portrait which has just been presented.

The PRESIDENT.—Do not you think that is a matter of opinion, and

that we might consider it more at leisure? I think a more mature opinion would be preferable. I think it might be left over until next meeting, and the opinion taken then, so as to give an opportunity for discussion.

Mr. LOCKE.—The painter is quite willing to take the skull out if we think it necessary.

The PRESIDENT.—Will you kindly tell Major Marriott that we will leave it over for three months, and it will have our mature consideration.

CORRESPONDENCE.

The SECRETARY read the following letter :—

"*Edinburgh, September* 7, 1904.

"*Examinations.*

"DEAR MR. HILL—I notice that it has been proposed to hold the exams., written and oral, alternately in Edinburgh and in Glasgow annually. I think the move one in the direction of economy, &c., so far as the orals are concerned, and that there should be no great difficulty about them, but I rather think it is a mistake to change the present mode of holding the written examination, *i.e.*, in Glasgow and Edinburgh, separately. This for several reasons :—

(1.) It means two journeys to the students, which seems a really unnecessary expense.

(2.) That probable great difficulty of finding a suitable hall, either in Edinburgh or Glasgow, in which, *without crowding*, the examination could be comfortably held. I do not know of any hall in either place that would suit our purpose at as reasonable a cost as by simply keeping to our present mode of holding the written. With the oral it is different, and easy enough to see one's way of managing, although you may expect much grumbling.—Yours very faithfully, "R. RUTHERFORD."

Mr. VILLAR.—I propose that that letter be referred to the Examination Committee for consideration and report.

Mr. MULVEY seconded the motion, which was carried unanimously.

The SECRETARY read the following letter :—

"*Royal Dick Veterinary College,*
"*Edinburgh, August* 1904.

"DEAR SIR—I am favoured with your letter of 28th ult., sending copy resolution passed by the Council of the Royal College of Veterinary Surgeons to the effect that in future the examinations in Scotland are to be held in alternate years in Edinburgh and in Glasgow. As Principal of this College I beg to enter my protest against this resolution, and have to point out that I never received any intimation that a resolution on this subject was to be under consideration at the last meeting of the Council, at which, as you are aware, I was not present. Surely it is only reasonable that the Governing Bodies of the Colleges affected should have been consulted before such a resolution was come to. So far as the Dick College is concerned, it has always been an understood thing that the examinations were to be held in Edinburgh. They have been held so ever since a Board of Examiners was appointed by the Highland and Agricultural

Society in 1827, shortly after the College was founded by the late Professor Dick. When the Royal College of Veterinary Surgeons was incorporated in 1844 there was no suggestion that the examination of the students attending the Dick College should be held elsewhere than in Edinburgh, and in point of fact they have, as I have said, up till now always been held in Edinburgh. So far as I can see, no good reason has been given for the proposed change. I cannot believe that the examination fees paid by the students attending the Dick College are insufficient to meet the expenses of the examiners who have to come to Edinburgh to conduct the examinations. I think they are more than sufficient to meet the expenses. This I have no doubt can be seen from a perusal of the accounts. As I have not access to the accounts here I shall be obliged by your furnishing me with an excerpt from them showing the expenses actually incurred in connection with the examinations of Dick College students during the last three years. Should the accounts, as I feel certain they will, bear out what I say, there can, it appears to me, be no excuse for the proposed change, so far at least as the Dick College is concerned. It would be time enough to consider what should be done when the examination fees paid by the Dick College students are insufficient to meet the expense of an examination in Edinburgh. Should such an event happen, the question arises, whether it might not be preferable to raise the fees rather than cause the students the great inconvenience and expense of having to go to another centre for their examinations.

"These are some of the arguments which I would have put forward if I had had an opportunity of being heard upon this resolution, and as the Colleges concerned were not consulted before the resolution was come to, I beg to request that the matter should be brought up again at the next meeting of the Council; in the meantime kindly let me have the excerpt from the accounts which I have asked for, and oblige.—Yours sincerely,

"J. R. U. DEWAR, *Principal.*"

The SECRETARY.—I wrote and told Professor Dewar that I would read the letter at the next Council Meeting, and then I received another letter from him asking me to send him the returns of the May Examination held in Scotland, which I have done. Then I have also received the following letter from Professor M'Call:—

"VETERINARY COLLEGE,
"GLASGOW, *5th October* 1904.

"Dear Sir—I beg to acknowledge your letter of 28th July last, intimating that a resolution had been passed by the Council 'That in future the examinations in Scotland be held in alternate years in Edinburgh and Glasgow. To commence in Edinburgh at Christmas next.'

"In July 1896 you will no doubt remember that a similar resolution was passed by the then Members of Council, and also duly intimated by you to me. On that occasion, after a representation had been made by me to the Privy Council, backed by fifteen Members of Parliament, the Council felt it to be their duty to *rescind the resolution.*

"In the hope that they will adopt a similar course, without putting me again to the trouble of having recourse to the Privy Council and Members of Parliament, I write this letter, and request you to respectfully place it before the meeting of Members of Council convened to be held in the Council Chamber, Red Lion Square, London, on Friday next, the 7th current.—Yours very faithfully, JAMES M'CALL, *Principal.*

Mr. BARRETT.—I beg to move that the letters be sent to the Examination Committee for consideration and report.

Mr. MULVEY.—I second that.

Professor WILLIAMS.—I beg to suggest that if these are to be sent to the Examination Committee a special meeting of that Committee might be held, because the resolution of the Council will be put into operation before the next ordinary Examination Committee meeting.

Mr. MULVEY.—That would necessitate a special meeting of the Council for the Committee to report to.

Professor WILLIAMS.—Certainly.

The PRESIDENT.—I am afraid that is not a direct amendment to the proposition that I have before me; it is a consequential amendment perhaps, but not a direct amendment. Unless there is a direct amendment to the proposition I must put it to the meeting.

Professor WILLIAMS.—Then I shall make a proposition afterwards that there be a special meeting.

The PRESIDENT.—Certainly.

Mr. LOCKE.—I might point out that it will make no alteration in regard to the Examination at Christmas, because in any case the Christmas Examination will be held in Edinburgh.

Professor WILLIAMS.—No, it will be held in Glasgow at Christmas. If it were held in Edinburgh all the Glasgow men would have to go to Edinburgh.

Mr. Barrett's resolution, that the letters be referred to the Examination Committee for consideration and report, was then put and carried.

Professor WILLIAMS.—I now beg to propose that the Examination Committee be requested to meet at an early date to consider these letters, and that afterwards there be a special meeting of Council to receive the report of the Examination Committee.

Mr. BARRETT.—I second that.

Mr. MULVEY.—Before that is put I should like to point out that, however the Committee may report to the Council, it will be impossible without notice of motion to rescind the resolution that was carried at the last meeting. It would be impossible to hold an examination otherwise than was then ordered, that is to say, it will take place in Edinburgh next Christmas. Notice of motion must be given to rescind a motion which has already been passed.

Professor WILLIAMS.—With your permission, Sir, I would ask leave to refer to the Rules of the Royal College. This is not a bye-law, and it can be altered by the majority of those present.

Professor M'FADYEAN.—I should like to endorse what Professor Williams has said as against what Mr. Mulvey said. I think, if Mr. Mulvey will reflect, he will remember that it simply came up at the ordinary July meeting to fix the date of the examination, and it was so fixed, and it is quite within the power of the Council to rescind that without any notice of motion being given. But my main purpose in rising is to ask what is the motive of postponing the consideration of this matter? Quite obviously we are only postponing it. It is to be remitted to this Committee, which has no power to act of itself, and it is going to put many members of the Committee to great inconvenience to come back here to a special meeting. I suggest that the matter may as well be dealt with now.

Mr. BARRETT.—But my motion has already been carried, that the letters be referred to the Examination Committee.

XUM

The PRESIDENT.—I must point out, in response to Professor M'Fadyean's remarks, that a certain motion has been carried, and that unless the Council now agrees to rescind that motion we cannot adopt his procedure.

Professor M'FADYEAN.—That is the sensible thing to do.

The PRESIDENT.—To at once consider this correspondence. In the event of any member wishing to re-open the discussion, it would be in order to propose that the motion which is carried be rescinded.

Professor M'FADYEAN.—May I point out that there would be nothing incongruous in our now determining with regard to the Examinations at Christmas. The larger question, as to what is to be the rule in the future, might still be remitted to the Examination Committee, but we may now, I think, consider whether we are going to adhere to the decision arrived at last time with respect to the place of examination at Christmas.

Mr. BARRETT.—I have no desire to block the matter being discussed to-day, excepting that I would point out that the motion has just been passed, that the letters from Professors Dewar and M'Call should be referred to the Examination Committee; and inasmuch as those letters deal with the specific subject it seems to me that they must go to the Committee now that the vote has been passed.

The PRESIDENT.—I may point out that, as Professor M'Fadyean has very truly shown, the larger question of the future management of these examinations is in a manner referred to the Examination Committee by the handing over of these letters to them for consideration, yet it would not be incongruous and would not be repugnant to that motion to consider the question of the holding of the next examination at Christmas.

Mr. BARRETT.—With respect to you, I do not see why we should consider the question of holding the next examination, when at the last meeting this Council came to a certain decision with regard to holding the examinations generally. I have no desire to discuss the matter, except in this way, that Professor Dewar has written to me on the subject; he has explained to me that he is unable to be present to-day, and asked me to look up the matter for him. I did not say that the resolution which was passed on the last occasion was wrong; I do not say that I disagree with it; but having regard to the fact that Professor Dewar is very much opposed to it, and that he was not here before, I think we should act wisely if we refer the whole matter to the Examination Committee in order that it might be discussed when he is present, so that he can state his views on the subject. I have no desire to block proceeding at all, and if it is the wish of the Council I should be prepared to withdraw my motion as far as I can, and so far as the President will permit me to do so.

Professor M'FADYEAN.—If Mr. Barrett regards it as certain that the decision arrived at with regard to the ensuing Christmas examinations is not to be altered there is no urgency. There is no reason why a special meeting of Council should be summoned before January. I had absolutely no motive whatever in suggesting that if the December examination is to be considered we ought to consider it now, and that absolutely no good purpose was to be served by first referring it to the Examination Committee, practically ourselves, who would make a report to ourselves, and then we should again consider it at a special meeting.

Mr. BARRETT.—May I say, with your permission, in reply to Professor M'Fadyean, I was not present at the last meeting of Council, but the mode of determining the examinations in Scotland was decided upon by

the Council, and at the last meeting of the Council it was decided that the examination should be held in Edinburgh only.

Mr. LOCKE.—Edinburgh this year and Glasgow next.

Mr. BARRETT.—And therefore I do not see what good purpose would be served by re-opening a decision which was arrived at at the last meeting of Council.

Professor M'FADYEAN.—They why call a special meeting?

Mr. BARRETT.—Because Professor Dewar is feeling very keenly on the matter. I do not say that he is right; but I say that, having regard to the fact that he is Principal of one of the Scotch colleges, and was not present when the resolution was passed, and that no notice had been given to him that a resolution of this kind was to be brought forward, I think as a matter of courtesy the whole matter might be referred to the Examination Committee. That is all I wish to say.

The PRESIDENT.—From the point of view of order, I have a motion before me from Professor Williams, seconded by Mr. Barrett, and if there is no opposition to that motion—

Mr. BARRETT.—So far as I am concerned, if it will be to the manifest inconvenience of members of Council to attend a special meeting, I shall be prepared to withdraw my seconding. I do not desire to inconvenience the members at all.

Mr. GARNETT.—If I may be allowed to intervene for one moment, it is simply to express my view that when I voted for Mr. Barrett's resolution I voted for the opening of the whole question again, and I never anticipated for one minute that we would then be rushed—because it is rushing, especially country members, into a special meeting of the Committee and a special meeting of Council. We are content that the whole question should be raised up in the ordinary manner; and why this Council, to the inconvenience of country members, should be made the shuttlecock of two or three schools is beyond my comprehension.

Mr. BARRETT.—I desire to withdraw my resolution at the wish of the Council. I do not wish to inconvenience the members of Council at all.

Mr. ABSON.—The matter was thoroughly discussed at our last meeting.

The PRESIDENT.—Do you withdraw, Mr. Barrett?

Mr. BARRETT.—I desire to withdraw my seconding of the motion; I withdraw my support from it.

The PRESIDENT.—Do you withdraw, Professor Williams?

Professor WILLIAMS.—I do not see exactly what position we are in. There are a certain number of students who are due for examination in Glasgow at Christmas. I do not desire to see those students inconvenienced by being sent to Edinburgh, and I therefore have proposed, and it has been seconded, that if the Council agree with me, a special meeting of the Examination Committee be held to consider this matter, and determine whether the Glasgow students have to go to Edinburgh or not at Christmas.

Mr. ABSON.—Did Professor Williams take exception to the motion that was passed concerning the matter at the last meeting?

Professor WILLIAMS.—I did; if you had read the report of the Council meeting you would have seen so.

Mr. SIMPSON.—May it be made quite clear to us as to what our position would be in the event of a special meeting of Council being called to deal with this subject? As I read our Act it says no bye-law shall be

altered without the alteration being suspended; in fact, it says "No order, rule, or bye-law," so that even if notice were given to-day by a member to rescind the resolution which was passed at our last meeting there would be no time to deal with it by this Council, certainly not before the date of the next examination; and I doubt whether there would be any time before the January meeting. May our solicitor advise us as to whether I put the right interpretation on the Act?

The PRESIDENT.—Certainly.

Mr. THATCHER (Solicitor).—The question is whether this was a bye-law or not.

Professor M'FADYEAN.—Might I suggest that it came up in the ordinary course of business and required no notice of motion, because it is a resolution or bye-law that the places and dates of the examination shall be fixed at the July meeting. I am inclined to think, despite what I said before, that Mr. Simpson is right.

Mr. THATCHER.—I do not know that the question of bye-law or no bye-law comes into it. Assume that it is not a bye-law; I still think that to alter a resolution passed at a Council meeting requires notice for the next Council meeting.

Mr. MULVEY.—Rescinding it.

Mr. THATCHER.—Yes. The bye-law on the subject, which I think would cover it, is bye-law 10, which says,—"Any member of the Council who shall be desirous of introducing any subject for discussion shall give notice thereof in writing to the Chairman at some previous meeting, or to the Secretary, in time for its announcement in the notice of meeting." I do not think you can alter a resolution which has been passed at one meeting without some notice at all events, which ought to appear on the agenda, in order that members may have the opportunity of supporting or contradicting the resolution upon which they voted at the previous Council meeting.

Professor WILLIAMS.—But at the same time, without any notice, a resolution can be put and carried.

Mr. THATCHER.—A resolution can be put and carried.

Professor WILLIAMS.—Without notice?

Mr. THATCHER.—Rescinding a previous resolution? That is another matter.

Professor WILLIAMS.—It seems to me rather a curious state of affairs if some one can suddenly put a resolution, without giving a notice of any description, and get it carried, perhaps in a small house, and then have to give three months' notice to rescind it.

Mr. THATCHER.—They need not give three months' notice. They need only, for an ordinary resolution, give notice to the Secretary, who will put it on the agenda for the next meeting. The idea is that everybody may have notice of any change that may take place, and have an opportunity of coming here and voting upon it.

Professor WILLIAMS.—Then I ask the question, Sir, whether at the last quarterly meeting notice was given that this resolution was about to be put before the Council? It was not.

Mr. THATCHER.—Nor was it necessary. So long as a notice is given for the alteration of a resolution—I am not speaking of a bye-law—and that notice appears on the agenda calling the meeting, it gives every member notice of what is intended to be done, and he can come here and

vote either for or against it as he pleases. If he stops away, he stops away with full knowledge.

Professor WILLIAMS.—Certainly. But excuse me for one moment; I wish to ask a question. You say that the notice of a resolution must be put on the agenda paper—no one was aware of that.

Mr. THATCHER.—To alter a resolution.

Professor WILLIAMS.—And at the same time it is unnecessary to give notice of a resolution about to be proposed, so that those who are interested may be present? If Professor Dewar had known that this was coming before the Council he would have made it his business to be present.

Professor M'FADYEAN.—Might I point out to Professor Williams that whether notice is given or not with regard to a resolution turns absolutely on whether that resolution, if carried, will affect an alteration in an existing bye-law.

The PRESIDENT.—I really must call the meeting to order, I have no formal motion before me at present. A motion was moved by Professor Williams, seconded by Mr. Barrett, and Mr. Barrett has withdrawn his support. There is therefore no business before the meeting, and unless the motion is promptly seconded I shall proceed to the next business.

The motion not being seconded, the Council proceeded to the next business.

FINANCE COMMITTEE.

Mr. LOCKE read the report of a meeting of the Finance Committee held on October 7th, 1904, which stated that the receipts and payments during the preceding quarter were examined and found correct. The quarterly statement of the Treasurer was submitted, and the Committee recommended that the present liabilities be discharged and cheques be drawn for the amounts, and various amounts for petty cash, insurance, curator, repairs to building, gas, and printing. The Committee recommended that in future first-class travelling expenses and one guinea per night be allowed the delegates attending the examinations. They further recommended that, with regard to the lighting and ventilation of the Council Room, the question be referred to the Sub-Committee of the General Purposes Committee appointed for consideration and report.

On the motion of Professor Williams, seconded by General Thomson, the report was adopted.

REGISTRATION COMMITTEE.

The PRESIDENT read the report of a meeting of the Registration Committee held on October 6th, 1904, which stated that the President was elected Chairman of the Committee for the ensuing year. The Solicitor reported that prosecution, conviction, and fine of £1 and costs had been obtained in one case, while in others undertakings or satisfactory explanations had been received. The Committee recommended that further proceedings should not be taken in certain cases, and several cases were referred to the Solicitor for further evidence to be obtained. The Committee recommended prosecutions against unqualified persons in certain cases, should the Solicitor consider the evidence satisfactory, and unless the objectionable words or signs were removed within seven days after notice. The Committee recommended that cautionary notices be sent in other cases, and recommended the restoration of the name of Mr. Robert

Wilson on the usual terms, his name having been removed under sub-section 4 of section 5 of the Act. A member whose name had been removed under sub-section 4 of section 5 of the Act, and against whom a prosecution was pending under section 17, appeared and applied for restoration, but after hearing the Solicitor and the member, the Committee recommended the case to be adjourned for three months, to enable the Solicitor to endeavour to obtain evidence of the guilt or otherwise of the accused, and to apply to the magistrates for a similar adjournment. The Committee considered the application of Mr. Sutherland for registration as a member on his statement that he was a holder of the Diploma of the Highland and Agricultural Society, and adjourned the matter for evidence on the subject. It was suggested that a list of the holders of the Veterinary Diploma of the Highland and Agricultural Society be made to appear in the Register under a separate heading.

On the motion of Mr. Mulvey, seconded by Mr. Abson, the report was adopted; and on the motion of Mr. Mulvey, seconded by Mr. Villar, it was resolved that the orders for prosecutions be signed, and the seal of the College affixed thereto.

SUB-EXAMINATION COMMITTEE.

Mr. MULVEY.—A meeting of the Sub-examination Committee was called, but there was not a quorum, so no meeting was held.

EXAMINATION COMMITTEE.

Mr. MULVEY read the report of a meeting of the Examination Committee held on October 6th, which stated that the reports of the examinations and the examiners' reports were read, and after due consideration the Committee had nothing special to report. A letter was read from Mr. F. Richardson, a student under the three years' course rejected at the oral in December 1900, asking to be allowed up at the coming Christmas examination. The Committee recommended that he be admitted to the final examination under the three years' system in December next, provided he presented the certificate of eligibility required by the bye-laws. A letter was read from Mr. H. E. Cross, a candidate for the Bursary Prize, asking if the winner would be obliged to go to France immediately after the result of the competition, or whether he could delay his departure for, say, six months. The Secretary was instructed to write to Mr. Cross in the affirmative. A letter was read from the University of Birmingham, asking under what conditions the Royal College of Veterinary Surgeons would be willing to place a senior certificate and a junior certificate on their list of exempting tests. The Committee instructed the Secretary to reply to the effect that the whole subject was at present under consideration. The Secretary was instructed to inform the examiners on the subjects of Biology and Physiology that in each case the requisite number of questions shall be sent by the examiners, and that a student would not be required to answer so many on Zoology and so many on Botany, or so many on Physiology and so many on Histology, but should have the option of choosing any four of the six questions on the paper. An error having been discovered in the printed instructions issued to the examiners, it was recommended that the whole of the papers remaining in stock be destroyed and fresh ones printed, the proof to be first submitted to the Chairman. The Secretary was

instructed to again inform the Secretary of the Institute of Public Health that a Sub-Committee had been formed to consider the whole question of their letter. The Committee went carefully through the list of Educational Certificates, and all were passed with the exception of two, one of which was not recognised under the schedule of the Examining Bodies as required by the College, and the second because it did not contain Euclid. The Committee had before them notices of motion by Professor M'Fadyean which were relegated to them for consideration by the Council, and the Committee recommended the following alterations:—

Every candidate who desires to present himself for the first time for the A or First Professional Examination must, not less than seven days before the commencement of the examination, submit to the Secretary of the Royal College of Veterinary Surgeons, or other person appointed for that purpose by the Council, certificates to the following effect:

1. Of having passed one of the examinations in general education specified in the First Schedule annexed to these bye-laws.

2. Of having, subsequently to having passed the examination in general education, been a student for one session at one of the affiliated Colleges, and of having therein satisfactorily attended during that period the following courses of instruction.

a. Anatomy.—A course of not less than 50 lectures, and 20 hours' practical instruction on the osteology and arthrology of the domesticated animals.

b. Chemistry and elementary physics.—A course of not less than 80 lectures.

c. Practical Chemistry.—A course of practical instruction extending to not less than 30 hours.

d. Biology.—A course of not less than 60 lectures and 20 hours' practical instruction.

Every candidate who desires to present himself for the first time for the B or Second Professional Examination must, not less than seven days before the commencement of the examination, submit to the Secretary of the Royal College of Veterinary Surgeons, or other person appointed for that purpose by the Council, certificates to the following effect:—

1. Of having, subsequently to having passed the First Professional Examination, been a student for one session at one of the affiliated Colleges, and of having therein satisfactorily attended during that period the following courses of instruction:—

a. Physiology.—A course of not less than 80 lectures on the physiology of the domesticated animals.

b. Histology.—A course extending to not less than 40 hours' practical instruction regarding the histology of the domesticated animals.

c. Anatomy.—A course of not less than 80 lectures on the anatomy of the domesticated animals.

d. Practical Anatomy.—A course extending over not less than five months, during which the student must have dissected the whole body of the horse at least once to the satisfaction of his teacher, and attended not fewer than 20 demonstrations on the anatomy of the other domesticated animals.

e. Stable Management.—Manipulation of the domesticated animals, and Principles of shoeing. A practical course extending to not less than 20 hours' instruction.

Every candidate who desires to present himself for the first time for the C or Third Professional Examination must, not less than seven days before the commencement of the examination, submit to the Secretary of the Royal College of Veterinary Surgeons, or other person appointed for that purpose by the Council, certificates to the following effect:—

1. Of having, subsequently to having passed the Second Professional Examination, been a student for one session at one of the affiliated Colleges, and of having therein satisfactorily attended during that period the following courses of instruction:—

a. Pathology.—A course of not less than 80 lectures on the morbid anatomy and pathology (including bacteriology) of the domesticated animals.

b. Practical Pathology.—A practical course, extending to not less than 40 hours' instruction, on the morbid anatomy and pathology (including bacteriology) of the domesticated animals.

c. Materia Medica, Therapeutics, and Toxicology.—A course of not less than 40 lectures.

d. Pharmacy and Pharmacology.—A practical course extending to not less than 20 hours' instruction.

e. Veterinary Hygiene and Dietetics.—A course of not less than 40 lectures on the hygiene of the domesticated animals.

Every candidate who desires to present himself for the first time for the D or Final Examination must, not less than seven days before the commencement of the examination, submit to the Secretary of the Royal College of Veterinary Surgeons, or other person appointed for that purpose by the Council, certificates to the following effect:—

1. Of having, subsequently to having passed the Third Professional Examination, been a student for one session at one of the affiliated Colleges, and of having therein satisfactorily attended during that period the following courses of instruction:—

a. Principles and Practice of Veterinary Medicine and Meat Inspection.—A course of not less than 100 lectures.

b. Principles and Practice of Veterinary Surgery and Obstetrics.—A course of not less than 100 lectures.

c. Clinical instruction and practical meat inspection.—A practical course extending to not less than 300 hours' instruction.

Professor M'FADYEAN.—I would like to point out that the wording of a portion of the report is not quite accurate. The Committee did not consider certain notices of motion which I had given, but they considered a matter referred to them by the Council in July last, which matter is recorded in the minutes that were adopted to-day, and I think it would be as well to put that in. It was remitted to the Examination Committee to draw up regulations specifying the amount and character of the tuition to be required from each student, and that is what the Committee did.

Mr. MULVEY.—That is so. We say in the minutes—"The Committee

had before them notices of motion by Professor M'Fadyean which were relegated to them for consideration by the Council."

Professor M'FADYEAN.—The notices of motion were not relegated to them. I gave notice of motion on this subject, and the Council passed a resolution to that effect.

Mr. MULVEY.—And directed the Committee to consider them and draw up a report.

Professor M'FADYEAN.—It is really a trivial matter, but it is as well to be accurate.

Mr. MULVEY.—I have altered it to read, "The Committee had before them the resolution of the Council on the motion by Professor M'Fadyean," &c.

Professor M'FADYEAN.—I might remind the Council that the resolution was as follows:—"That it be remitted to the Examination Committee to prepare and submit to the Council draft regulations specifying appropriate courses of lectures and practical instruction to be attended by students in order to qualify for examination." I withdraw my criticism.

Mr. VILLAR.—There is one matter in connection with this report to which I should like to refer. The details given in one section are rather different to what we passed yesterday. If I can look up a copy of the alterations I will tell you exactly what they are.

Mr. SIMPSON.—While Mr. Villar is examining the alterations, I should like to say that I was absent from the Examination Committee yesterday. Doubtless the Committee had good reasons for using in one place "hours" and in another "lectures." Might some explanation be given to those who were unfortunately absent yesterday?

Professor M'FADYEAN.—The reason is that "hours" refers to practical work all through, and of course practical instruction is not a lecture. It is the customary way of defining the extent of practical instruction. 300 hours' clinical work means 300 hours spent in connection with clinique, not 300 hours listening to a lecture.

Mr. VILLAR.—My point is this. It says: "(D) Practical Anatomy.—A course extending over not less than five months, during which the student must have dissected the whole body of the horse at least once to the satisfaction of his teacher, and attended no fewer than 20 demonstrations on the anatomy of the other domesticated animals." What I submit is that it was not arranged that those 20 demonstrations should be done within a space of five months, but that they should be extended over the whole of the educational year. There is no reason why those 20 demonstrations in practical anatomy should be limited to one part of the educational year, inasmuch as they should be extended over the whole course. As regards the ordinary dissection of subjects, it is necessary to limit the time, because one knows in hot weather you cannot dissect.

Professor M'FADYEAN.—There are two points raised by Mr. Villar. The first is as to the accuracy of what has been read by Mr. Mulvey. I think I may offer an opinion on that, as it was my notice of motion that was adopted. I have the paper in my hand, and I am prepared to vouch for the absolute accuracy of that particular paragraph. The other point raised by Mr. Villar is as to the advisability of limiting the practical demonstrations on the anatomy of the other domesticated animals to five months. May I point out that Mr. Villar has entirely misread this bye-law, and presumably he is under the same mistake with regard to the other. They are

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not limited as regards their length, except in the downward direction. They must not be less than five, but they may be, and, of course, they will be more. The dissection will also, I take it, as far as the hot summer weather permits, be spread over the whole session. I am quite sure that if Mr. Villar will look at it again he will see that it is to be not less than five months.

Mr. MULVEY.—That was the intention of the Committee, that this is the minimum.

The CHAIRMAN.—I am now open to receive a motion that the report be adopted.

Professor WILLIAMS.—I would first of all ask Professor M'Fadyean if he will be good enough to add to these regulations the date at which they should come into force. There are students attending in the veterinary schools at the present time who are working for the Christmas examination, and I have no doubt many of those men may not perhaps conform to all that is necessary as laid down here.

The CHAIRMAN.—May I point out that what we have to do at the present time is to confirm the business which was done yesterday, and that after that has been either amended and confirmed, or confirmed in its present form, it will then be in order to propose something supplementary.

Mr. MULVEY.—As this is an alteration of bye-law, it will have to be suspended for three months.

Professor M'FADYEAN.—The adoption of this report alters no bye-law.

Professor WILLIAMS.—But there is no reason why an amendment should not be made in connection with this, or an addition.

Professor M'FADYEAN.—I entirely agree with what Professor Williams has said, namely, that assuming it pleases the Council to give effect to these recommendations by altering its bye-laws, it is highly necessary that a date at which the alterations come into operation should be fixed.

Professor WILLIAMS.—It has always been done.

Professor M'FADYEAN.—That is so. My intention is, before the close of the proceedings, if the Council adopts this report—whether or not it adopts this report—to move that the bye-laws be altered as suggested by the Committee, and I propose to add to that a rider that these alterations shall not come into effect until December 1905.

Professor WILLIAMS.—You must make it January 1906, because then the Christmas examination is over.

Professor M'FADYEAN.—We can discuss that later. I think it must be later.

CHAIRMAN.—For the moment we have certain minutes before us, which have either to be amended and confirmed, or confirmed as they stand. If there is any amendment which any member desires to bring forward now is the proper time to do so.

Professor WILLIAMS.—In order that it may be perfectly clear, I should like to know what is meant by several paragraphs. I will only read one. For instance, it says: "(1) Of having, subsequently to having passed the Second Professional Examination, been a student for one session at one of the affiliated Colleges." Does that mean that a student who passes, we will say, in Edinburgh last May may come to London and attend his classes in London till Christmas, for ten weeks, and then go to another school for the remaining twenty weeks to make up the session; or does it mean that a student must attend the session of thirty weeks at one school?

Professor M'FADYEAN.—I think I can answer that question, because I have a distinct recollection that it was raised by myself on a former occasion with regard to the existing bye-law, and Professor Williams may recollect that the Council answered my question to the effect that it did not matter whether a student spent three terms at three separate colleges, or the whole three of them at one college. I am not expressing any opinion as to the wisdom or the advisability of it, but that is how the Council has interpreted the existing bye-law, which is to the same effect as this, and the Council has examined students who have attended the session partly at one college and partly at another. I can name some members, if necessary, who hold the diploma and obtained it in that way.

Professor WILLIAMS.—I am very much surprised, because I always read it that he must attend thirty weeks at one school, and, if he is rejected, ten weeks at a school. I have been under a wrong impression for years, then.

The CHAIRMAN.—Is there any amendment or alteration of this report?

General THOMSON.—I move that the report as amended be adopted.

Mr. ABSON seconded the motion, which was carried unanimously.

GENERAL PURPOSES COMMITTEE.

Mr. WRAGG read the report of a meeting of the Sub-Committee of the General Purposes Committee held on August 19th, which stated that the Committee, after carefully inspecting the estimates, accepted that of Messrs. Barker & Son for the general work of cleansing and decorating the Council premises, amounting to £129 : 19s. A separate contract was made for the iron protection at the rear of the premises, which was accepted after the contractor had been asked what quality and weight of iron he intended to use. After due consideration the Committee resolved that the proposed ventilation of the Board Room be not carried out for the present. It was reported by the builder that the stone work in front of the premises was in such a very bad state that something would have to be done to it at once; a contract was entered into with him, and the necessary repairs carried out, it being agreed to spend the money that was voted by the Council in that way instead of carrying out the scheme of ventilation. It was decided that the whole of the arrangements should be left in the hands of the Chairman, Mr Wragg.

Professor METTAM.—I should like to move that the General Purposes Committee take into consideration the lighting of this place as well as its ventilation; and seeing that the cable for the electric cars is being laid in front of the College, probably an estimate could be obtained so that the College may be wired. Also some scheme of ventilation, probably by means of motor fans, might be adopted. I therefore suggest that the labours of this Sub-Committee be not ended until they have considered these questions.

The CHAIRMAN.—Whilst I have no doubt that the Sub-Committee will give the matters their most respectful attention, I do not think that that recommendation is strictly in order. The business we have at the present moment before us is that of discussing the report, amending it in any way the Council may think fit, and finally adopting it; but it is a report of work done, and work to be done in the future cannot be included in it. But I have no doubt the Committee will take due notice of the observations which have been made.

Mr. LOCKE.—That was decided upon by the Finance Committee. The Finance Committee recommended, that with regard to the lighting and ventilation of the Council Room the question be referred to the Sub-Committee of the General Purposes Committee appointed for consideration and report. That meets the requirements of Professor Mettam.

Mr. MASON.—I move that the report be adopted.

Mr. M'KINNA.—I second that, and at the same time I think we ought to thank the Sub-Committee for their labours. I am sure we feel the benefit of what they have done; the place is now very much more comfortable. The only regret I have is that the money was not spent on the ventilation of the building, in order that we might at least have comfort while we are at work here; but we hope that will be done in the future.—(Hear, hear).

The report was then unanimously adopted.

The CHAIRMAN.—So far as the individual members of the Committee are concerned, I may say that in the actual supervision of the work the lion's share has certainly been done by our Honorary Treasurer.—(Hear, hear). Throughout he has shown an interest in the matter and a zeal both in initiating and carrying out the work for which every member of the Committee I feel sure is greatly obliged to him. Without him we should not have carried out the work so efficiently.

STEEL MEMORIAL COMMITTEE.

Mr. MULVEY.—Unfortunately there is no report from the Steel Memorial Committee, because there is no Steel Memorial Committee in existence. It was not reappointed this year, and has not been reappointed. Our Secretary summoned those members who were members a few years ago. This is the year in which the medal should be awarded, and I suggest that it would be as well that the matter were now dealt with by the Council, and if they think right, to appoint a Committee, but there is no Committee at present in existence.

Mr. BARRETT.—May I ask why a new Committee was not formed?

Mr. MULVEY.—It was forgotten, I suppose?

The PRESIDENT.—Is it a yearly committee? I think there is a bye-law which says that all Standing Committees shall continue in existence until their successors are appointed.

Professor M'FADYEAN.—Half of them may be dead, or not on the Council.

Mr. THATCHER.—Bye-law 19 says—"Members of Standing Committees shall remain in office until their successors are appointed. Members of Special Committees shall remain in office until their final report is received and adopted by the Council."

Mr. MULVEY.—The final report is when they recommend to whom the reward shall be made, and their duties then terminate.

The PRESIDENT.—The simplest way would be if you propose a resolution the Committee be appointed.

Mr. MULVEY.—With your permission I should prefer to move that this year no award be made, and in the meantime a Committee can be appointed.

Mr. MASON.—I second that.

The PRESIDENT.—It would be a work of supererogation to say that no medal be awarded, because you simply leave things *in statu quo*; there will be no medal awarded without a special motion.

Mr. VILLAR.—Surely it is desirable to have a Committee and take the views of the Committee as to whether the Steel Memorial Medal shall be given or shall not.

The PRESIDENT.—That is a matter on which the opinion of the Council, of course, can be taken; you can propose a motion to that effect. Unless there is a proposition of some sort we must proceed to the next business.

Mr. MULVEY.—Will not you take mine?

The PRESIDENT.—Your proposition is that no medal be awarded, but to that I replied it is the work of supererogation, because if you simply sit still there will be no medal awarded. There is no Committee to award it.

Mr. MASON.—I propose we get on with the next business.

Mr. GARNETT.—I second Mr. MASON's proposition that we proceed to the next business.

The resolution was then put and carried.

APPOINTMENT OF EXAMINERS FOR THE WALLEY MEMORIAL PRIZE EXAMINATION AND THE JUBILEE AND BURSARY PRIZE EXAMINATION.

The Council then proceeded to elect by ballot the examiners for the Walley Memorial Prize Examination. For Pathology the following candidates were nominated:—J. M'Lauchlan Young, F.R.C.V.S., F.R.S.E., F.R.P.S.; W. Bullock, M.D.; E. R. Butler, F.R.C.V.S.; H. G. Bowes, F.R.C.V.S.,; J. S. Lloyd, F.R.C.V.S.

Mr. MULVEY.—I should like to ask how many of the candidates have sent in testimonials as to sobriety, &c.

The PRESIDENT.—I have not had any testimonials submitted to me, but one gentleman, whose name I cannot now recall, sent me a long typewritten account, but as I did not consider it an official document I did not take any notice of it.

The ballot was then taken, and resulted as follows:—Bullock 14; Bowes 14; Butler 10; Lloyd 5; Young 4.

The PRESIDENT.—In the appointment of examiners for the professional examinations, where large fees are paid, it is usual to require that each candidate appointed should have an absolute majority. In this case, the fees are nominal, and unless it is the special wish of the Council I shall not take a second ballot, in order to make sure that the two gentlemen have an absolute majority. I take it that that is your wish. (Hear, hear,)

Mr. MASON.—I think we ought to conduct this election the same as we do for the professional examinations.

Professor WILLIAMS.—I beg to point out that there are 26 members of Council present, and that Dr. Bullock and Mr. Bowes have each obtained a majority of the Council, namely, 14.

The PRESIDENT.—I shall be glad to have an expression of opinion on the subject, should that point arise in the next classes.

Mr. LOCKE.—It depends on how many votes they receive.

The PRESIDENT.—It is a question of whether there is a definite majority; in this case they have each received votes equal to more than half the number of members of Council. I am told that there are 26 members present, and 14 votes have been recorded against both these gentlemen. Unless some motion is brought forward, I shall consider that the candidates stand in the order in which they are shown in the ballot.

The PRESIDENT then declared Messrs. Bullock and Bowes elected Examiners in Pathology.

The following gentlemen were nominated as examiners in Materia Medica:—James Clark, F.R.C.V.S; J. M'Lauchlan Young, F.R.C.V.S., F.R.S.E., F.R.P.S.; F. T. G. Hobday, F.R.C.V.S., W. G. B. Dickinson, F.R.C.V.S.

On the ballot being taken it resulted as follows:—Clark 21; Hobday 16; Young 6; Dickinson 4.

The PRESIDENT declared Messrs. Clark and Hobday elected.

The following gentlemen were nominated as examiners in Veterinary Hygiene:—Messrs. J. A. Nunn, F.R.C.V.S., C.I.E., D.S.O., W. Hunting, F.R.C.V.S., J. M'Lauchlan Young, F.R.C.V.S., F.R.S.E., F.R.P.S.; W. Woods, F.R.C.V.S.; R. Porch, F.R.C.V.S.; W. G. B. Dickinson, F.R.C.V.S.; W. T. Wilson, F.R.C.V.S.; J. S. Lloyd, F.R.C.V.S.

On a ballot being taken it resulted as follows:—Woods 19; Hunting 11; Nunn 8; Lloyd 7; Porch 2; Dickinson 1.

The PRESIDENT.—On the first vote Messrs. Woods and Hunting appear to be elected, and unless there is a demand for a second ballot I shall declare those two gentlemen elected. Is there any such demand?

Professor M'FADYEAN.—Is this procedure legal?

The PRESIDENT.—Yes, it is a perfectly legal procedure, unless objection is taken to it, but it is usual to demand an absolute majority in cases where there are large emoluments or any very weighty honour. I am quite open to take a second ballot if any member of Council proposes that such be done. Is there any such proposition? ("No.")

The PRESIDENT.—Then I declared Messrs. Woods and Hunting duly elected.

The following gentlemen were elected as examiners for the Jubilee Memorial and Bursary Prize:—

Pathology, including Bacteriology.—Mr. LLOYD, F.R.C.V.S.
Physiology.—Major MARRIOTT, F.R.C.V.S.
Veterinary Medicine.—Mr. BLOYE, F.R.C.V.S.
Veterinary Surgery.—Mr. HUNTING, F.R.C.V.S.

It was decided that the appointments should be honorary.

The date of the Fellowship Examination was fixed for Tuesday, 13th December, in London.

Mr. SIMPSON brought forward a motion with reference to the foreign voting papers, so as to enable members of the profession to have a voice in the election of Members of Council. This was seconded by Professor WILLIAMS, but Professor M'FADYEAN moved a direct negative.

Ultimately the matter was referred to the General Purposes Committee for consideration and report. The meeting then terminated, and was immediately followed by a

SPECIAL MEETING.

The PRESIDENT in the chair, and the following Members were present:—General Thomson, Colonel Duck, Mr. Cope, Professors M'Fadyean, Owen Williams, Mettam, Penberthy; and Messrs. Locke, Simpson, Carter, Barrett, Abson, Banham, Fraser, Mason, Lawson, M'Kinna, Villar, Wragg (*Hon. Treasurer*), Garnett, and Mulvey, Mr. THATCHER

(*Solicitor*), and Mr. A. W. HILL (*Secretary*). Mr. WRAGG (*Hon. Treasurer*) brought forward a motion to the effect "that notices convening Council and Committee Meetings be issued *seven* instead of *four* days prior to the Meeting," but this was lost, seven voting against and six for it.

Mr. BARRETT, on behalf of Professor DEWAR, proposed—"That after the 31st October 1905 students who enter the Veterinary Schools shall, prior to their First Professional Examination by the R.C.V.S. produce a certificate entitling the holder to be registered as a medical student." No one seconded this proposition, and it consequently fell to the ground.

Professor M'FADYEAN moved—"Every student who is a candidate for the Diploma of the Royal College of Veterinary Surgeons shall, before he is admitted to the First Professional Examination, produce a certificate or other evidence satisfactory to the Council to show that he has passed one of the examinations specified in the First Schedule attached to these 'Bye-laws.' This alteration to come into force on the 1st August 1906." Carried unanimously.

Professor M'FADYEAN.—I now beg, Sir, to move the following:—"To substitute for Bye-law 62 the following: 'No student shall be eligible for the First Examination until he shall have attended one session at a recognised Veterinary College or School after having passed one of the examinations specified in the First Schedule attached to these Bye-laws;'" this alteration to come into force on the 1st August 1906. Carried unanimously.

Professor M'FADYEAN.—I formally move: "To substitute the following for the present First Schedule (pages 77-84):—

THE FIRST SCHEDULE.

List of Examining Bodies whose Certificates of Examinations in General Education are acceptable under Bye-law 52.

I.—UNIVERSITY EXAMINATIONS HELD IN THE UNITED KINGDOM.

A.

Final Examination for a Degree in Arts or Science of any University in the United Kingdom.

B.

UNIVERSITY OF OXFORD:—

Junior Local Examinations. (Certificate to include the required subjects.)
Senior Local Examinations. (Certificates to include the required subjects.)
Higher Local Examinations. (Certificates to include the required subjects.)
Responsions. (Certificates to be supplemented by others showing that the required mathematical subjects have been passed.)
Moderations. (Certificates to include the required subjects.)

UNIVERSITY OF CAMBRIDGE:—

Junior Local Examinations. (Certificates to include the required subjects.)

Senior Local Examinations. (Certificates to include the required subjects.)
Higher Local Examinations. (Certificates to include the required subjects.)
Previous Examination. (Certificates to include the required subjects.)
General Examination. (Certificates to include the required subjects.)

OXFORD AND CAMBRIDGE SCHOOLS EXAMINATION BOARD :—
Lower Certificate Examinations. (Certificates to include the required subjects.)
Higher Certificate Examinations. (Certificates to include the required subjects.)

UNIVERSITY OF DURHAM :—
Examination for Certificate of Proficiency. (The required subjects to be passed at one time.)
Senior Local Examinations. Certificate to include the required subjects.)

UNIVERSITY OF LONDON :—
Matriculation Examination. (Certificate to include the required subjects.)

VICTORIA UNIVERSITY OF MANCHESTER, UNIVERSITY OF LIVERPOOL. AND UNIVERSITY OF LEEDS :—
Matriculation Examination. (Certificate to include the required subjects.)

UNIVERSITY OF BIRMINGHAM :—
Matriculation Examination. (Certificate to include the required subjects.)

UNIVERSITY OF WALES :—
Matriculation Examination. (The required subjects to be passed at one time.)

UNIVERSITIES OF SCOTLAND :—
Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Medicine and Surgery. The required subjects to be passed at one or not more than two Examinations.)
Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Arts or Science. (Certificates to include the required subjects.)

UNIVERSITY OF ST. ANDREWS :—
Final Examination for the Diploma of L.L.A.

UNIVERSITY OF DUBLIN :—
Principal Public Entrance Examinations. (The required subjects to be passed at one time.)
Examinations for the First, Second, Third, or Fourth Year in Arts. (Certificate to be signed in the approved form by the Medical Registrar of the University.)

ROYAL UNIVERSITY OF IRELAND:—

Matriculation Examination. (Certificate to include the required subjects.)

II.—GOVERNMENT EXAMINATIONS HELD IN THE UNITED KINGDOM.

SCOTTISH EDUCATION DEPARTMENT:—

Leaving Certificate Examinations: passes in Lower Grade. (The required subjects to be passed at one or not more than two examinations.)

Leaving Certificate Examinations: passes in Higher Grade or Honours. (To include the required subjects.)

INTERMEDIATE EDUCATION BOARD OF IRELAND:—

Middle Grade Examination. (The required subjects to be passed at one time.)

Senior Grade Examination. (Certificates to include the required subjects.)

CENTRAL WELSH BOARD:—

Senior Certificate Examinations. (Certificates to include the required subjects.)

III.—EXAMINATIONS BY CHARTERED BODIES HELD IN THE UNITED KINGDOM.

COLLEGE OF PRECEPTORS:—

Examinations for First-class Certificate. (The required subjects to be passed at one or not more than two examinations.)

Preliminary Examination for Medical Students. (The required subjects to be passed at one time.)

EDUCATIONAL INSTITUTE OF SCOTLAND:—

Preliminary Medical Examination. (The required subjects to be passed at one time.)

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS IN IRELAND:—

Preliminary Examination. (The required subjects to be passed at one time.

IV.—EXAMINATIONS HELD OUT OF THE UNITED KINGDOM.

UNIVERSITY OF MALTA:—

Matriculation Examination.

UNIVERSITY OF CALCUTTA:—

First Examination in Arts.

UNIVERSITY OF MADRAS:—

First Examination in Arts.

XUM

UNIVERSITY OF BOMBAY :—
Matriculation Examination.

PUNJAB UNIVERSITY :—
Intermediate Examination in Arts.

UNIVERSITY OF ALLAHABAD :—
Intermediate Examination in Arts.

CEYLON MEDICAL COLLEGE :—
Preliminary Examination.

UNIVERSITY OF M'GILL COLLEGE, MONTREAL :—
Matriculation Examination.

UNIVERSITY OF BISHOP'S COLLEGE, MONTREAL :—
Matriculation Examination.

COLLEGE OF PHYSICIANS AND SURGEONS OF THE PROVINCE OF QUEBEC :—
Matriculation Examination.

UNIVERSITIES AND COLLEGES OF THE PROVINCE OF ONTARIO :—
Departmental Arts Matriculation Examination (conducted under the direction of the Provincial Education Department).

UNIVERSITY OF MANITOBA :—
Preliminary and Previous Examinations.

UNIVERSITY OF NEW BRUNSWICK, FREDERICTON :—
Matriculation Examination.

UNIVERSITY OF MOUNT ALLISON COLLEGE, NEW BRUNSWICK:—
Matriculation Examination.

COLLEGE OF PHYSICIANS AND SURGEONS, NEW BRUNSWICK :—
Matriculation Examination.

DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX, NOVA SCOTIA :—
Matriculation Examination.

PROVINCIAL MEDICAL BOARD OF NOVA SCOTIA :—
Preliminary Examination.

NEWFOUNDLAND MEDICAL BOARD :—
Preliminary or Matriculation Examination.

UNIVERSITY OF MELBOURNE :—
Matriculation Examination.

UNIVERSITY OF SYDNEY :—
Matriculation Examination.
First Year Examination in Arts.
Senior Public Examination.
Entrance Examination for Medicine and Science.

UNIVERSITY OF ADELAIDE :—
Senior Public Examination.
First Year Examination in Arts.

UNIVERSITY OF TASMANIA :—
Senior Public Examination.

UNIVERSITY OF THE CAPE OF GOOD HOPE :—
Matriculation Examination.

UNIVERSITY OF OTAGO :—
Preliminary Medical Examination.

UNIVERSITY OF NEW ZEALAND :—
Preliminary Examination for Medical Students.

CODRINGTON COLLEGE, BARBADOS :—
Examinations qualifying for a Degree in Arts at the University of Durham.

FOREIGN UNIVERSITIES IN EUROPE :—
The German Abiturienter-Examen of the Gymnasia and Real-gymnasia; Examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences, and other corresponding Entrance Examinations to the Universities in Europe.

EGYPTIAN GOVERNMENT :—
Examination for the Secondary Education Certificate.

*** (*a*) No Certificate from the Indian and Colonial Bodies in the foregoing Section (iv.) is accepted unless it shows that the Examination has been conducted by or under the authority of the Body granting it, includes all the required subjects, and states that all the subjects of Examination have been passed at one time.

(*b*) In the case of natives of India or other Oriental countries whose vernacular is other than English, an examination in a classical Oriental language may be accepted instead of an examination in Latin.

Subject to the conditions indicated in the foregoing List, the Preliminary Examinations recognised by the Council are required to include the following :—

(*a*) ENGLISH (Grammar; Paraphrasing; Composition; questions on English History and Geography).

(*b*) LATIN (Grammar; Translation into English from unprescribed Latin books; Translation into Latin of a continuous English passage and of short idiomatic English sentences).

(*c*) MATHEMATICS (Arithmetic; Algebra, including easy quadratic equations; Geometry; including the subject-matter of *Euclid*, books i., ii., iii., and simple deductions),

(*d*) One of the following subjects :—

(1) GREEK (Grammar; Translation into English from unprescribed Greek books; Translation into Greek of short idiomatic English sentences); or

(2) A MODERN LANGUAGE (Grammar; Translation into English from unprescribed books; Translation of a continuous English passage; and of short idiomatic English sentences.—(Carried unanimously).

Professor M'FADYEAN.—I desire to move our Bye-laws 52 to 55 be amended in accordance with the recommendations made in the report from the Examination Committee. To that I desire to add the following words, adopting the suggestion made by Professor Williams—"These alterations to come into force on the 1st August 1906."

The meeting then terminated.

SPECIAL MEETING OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

On Thursday, 20th October.

The confirmation of the proposed alterations made at the last Special Council Meeting was unanimously agreed to.

Original Papers.

LIVERPOOL UNIVERSITY VETERINARY MEDICAL SOCIETY.

THE Quarterly Meeting of this Society was held in the Thompson-Yates Johnston Laboratories on August 25th, Professor Boyce, F.R.S., in the Chair. There were present about forty members and visitors.

Mr. H. G. Bowes, F.R.C.V.S., of Leeds, was unanimously elected a member, and Mr. J. A. Gilruth, M.R.C.V.S., of New Zealand, an honorary corresponding member of the Society.

A letter was read from Professor Hobday kindly consenting to read a paper at the next meeting, the title of which will be published at a later date.

The SECRETARY, having read his report, announced his resignation from the Society, on account of his having accepted an appointment in India.

On the motion of Professor Boyce, F.R.S., seconded by Mr. James Sumner, M.R.C.V.S., Mr. Montgomery, late Honorary Secretary, was awarded a vote of thanks for his services.

Mr. J. T. Share Jones, M.R.C.V.S., was nominated for membership, and Mr. Fletcher, M.R.C.V.S., proposed that Mr. Share Jones should be appointed H.M. Secretary *pro tem.*

A most interesting discussion upon Mr. Annett's paper, "Diagnosis of Tuberculosis of the Udder," which was read at the previous meeting, was opened by Mr. James Sumner, and the following gentlemen also took part:—Professors Boyce and Williams, Messrs. W. J. Fletcher, Warwick Fowle, H. G. Bowes, Packman, and Woods.

In the unavoidahle absence of Colonel Nunn the paper was read by Mr. Share Jones, and has been published in the *Veterinary Journal.*

Colonel Nunn was awarded a vote of thanks on the motion of Professor Williams, seconded by Professor Boyce.

JNO. T. SHARE JONES, *Hon. Sec. pro tem.*

MELBOURNE UNIVERSITY AND VETERINARY EDUCATION.

FACULTY OF VETERINARY SCIENCE.

THE conference between the Committee of the Council and the Veterinary Board recommended that a deputation from the Council, the Veterinary Board, and the Council of Agricultural Education wait upon the Minister of Agriculture and submit to him the following recommendations:—

1. That the Melbourne Veterinary College be purchased by the Government at a fair valuation, and placed on a satisfactory footing.
2. That the College be vested in trustees, and be placed under the control of a Council consisting of two members appointed by the Government, four by the Veterinary Board, four by the University Council, and two by the Council of Agricultural Education.

In the event of the College being placed on a permanent footing, and becoming a public institution, the conference further recommended—

1. That a Diploma of Veterinary Science and a Degree of Bachelor of Veterinary Science be instituted by the University.
2. That a Faculty of Veterinary Science be instituted by the University, consisting of the professors and independent lecturers in the subjects of the Veterinary course, together with three members nominated by the Council of the University, two members nominated by the Veterinary Board, and one member nominated by the Pharmacy Board; the duties of the Faculty being to advise the Council as to appointments of lecturers, demonstrators, and examiners, and as to all matters connected with the course, and to prescribe the details of the course.
3. That the College be affiliated with the University, on condition (*a*) that no appointments of lecturers, demonstrators, or other teachers be made except after approval by the Council of the University, and only for such periods as the Council may approve; (*b*) that the Council of the University have power to make an inspection of the College and Hospital at such times and in such manner as it may direct; (*c*) that such Veterinary teaching be provided in the College as the Faculty of Veterinany Science may from time to time recommend.
4. That all students' fees be received by the College, the University being paid for work done at the University on terms to be arranged. Matriculation and degree fees to be paid to the University.
5. That the Veterinary Board cease to hold examinations, and become solely a registering body.

The recommendations were adopted, and the Committee of the Council was appointed a deputation to wait on the Minister.

(*The Melbourne Argus*, 6th September 1904.)

ROYAL VETERINARY COLLEGE, CAMDEN TOWN, LONDON.

The Session 1904-5 was opened at Camden Town on Monday, October 3. Major-General Thomson, C.B., D.G.A.V.D., presided.

The opening address was delivered by Professor T. G. BRODIE, M.D., F.R.S., who took as his main subject the general theme of education, which he considered of such overwhelming importance as to deserve frequent and fresh reconsideration. It was a well-recognised principle he said, that the nation which had reached the front rank by its energies, ambitions, and abilities could only maintain the position by continuing to progress. To maintain its leadership it must continue to lead and teach, and only by its excellence in leading and teaching could it hope to hold its proud position amongst the aspirants who were trying to overtake it and gain the premier *rôle*. General progress went hand in hand with education, and it was the duty of all connected with the College, the leading Veterinary College of this country, to bear in mind the part they had to play in the advancement of veterinary science. The problem was twofold: Firstly, the education of the students; and, secondly, the advancement of the art and science of veterinary medicine. The two were inextricably interwoven, for the more perfect the equipment for the prosecution of veterinary research and the more ardent the pursuit, the better for the training of the students and for sending them into the world with that scientific grounding which would enable them to undertake higher and more varied work. There was no question that the educational position in Great Britain at the present day was but a second-rate one when compared with the organisations so admirably developed in Germany, France, Belgium, and America. Such a position was most galling to our national pride, and it therefore became the duty of every one to realise the facts and strive by all means to remove the reproach as speedily as possible. He did not want to be misunderstood: he did not wish to infer that it was only veterinary science that showed such deficiencies. Unfortunately there were many others in the same case. The most formidable cause of such defects was the lack of endowment. Efficient scientific teaching was not and never could be self-supporting. It could be so only if the fees charged to the students were enormously raised, or if the numbers of students admitted to the classes greatly increased, a condition inimical to efficient teaching. In years gone bye it might have been possible to finance such a college as the Royal from the students' fees alone, but nowadays the cost of equipment and maintenance of expensive practical classes, which could alone make the teaching efficient, made such a thing impossible. The practical classes had not kept pace with the advance of the science. It was, of course, obvious that if young men were to be attracted in greater numbers into the profession commensurate advantages must be offered to them. That was very fully recognised in Germany, America, and other foreign countries where State aid was given very liberally to Veterinary Colleges. Germany, for instance, possessed six large colleges or high schools, each receiving large monetary grants from the State. Munich received as much as £10,000 a year in that way. In addition, a large capital sum, exceeding £333,000, had been granted within the past few years to four out of the six schools for new buildings and equipment. The result had been the improvement of the education of the students, and the bettering of their position, had opened up new fields for their work, and their numbers had

steadily increased from 379 in 1880 to 1470 in 1902. The schools had been able to attract teachers of great ability and obtain from them the devotion of their whole time and energies to the one appointment. They were actively engaged in research work, and many of them were men of world-wide reputation. He had no doubt that these veterinary high schools, by reason of their efficiency, would in the near future have conferred upon them the right of granting degrees.

Professor BRODIE then turned to the subject of the new School of Veterinary Medicine in Liverpool, an undertaking which he thought furnished a lesson which it would be disastrous not to take to heart. That school started with the enormous initial advantage of being an integral part of the University of Liverpool; the preliminary teaching was conducted in the same laboratories and with the same equipments, and to a large extent by the same teachers employed in teaching the medical students. That was also an enormous advantage both to the veterinary students and the students of human medicine. Much of the teaching was, or should be, identical. All that was necessary in the new school was the extra expense and accommodation for that part of the teaching which was of a more specific character. Being a constituent part of the University, the new department was able to draw on the University funds, which were considerable, as the University received large annual aids from the Corporations of Liverpool and other large towns, and the County Councils of Lancashire and Cheshire. The Committee responsible for the scheme had also succeeded in obtaining promises of money guaranteeing the payment of the salaries of the new teachers and the expenses of the whole department. All this was for the ultimate good of veterinary teaching in the country, and nothing but good wishes and hearty greetings should be given to the latest infant in the veterinary world.

With regard to the more personal aspect of the undertaking and its effect upon the Royal College, Professor Brodie pointed out that hitherto veterinary education in Great Britain had been in the hands of a few schools, amongst which that at Camden Town had held the premier position. That position was now seriously menaced, and it behoved all connected with the College to see that it was not outstripped in the race by a younger institution which might have learnt and profited by lessons of the past. He emphasised the advice given two years ago by Professor Bottomley in his introductory address to the College, to wake up and show the world that Britain was not yet played out. John Bull required to be pricked and bled,—he was too plethoric. He had opened one eye, but it was not the one directed towards Camden Town. By importunity and aggressive means the other eye had to be made to open to some purpose. It was for the College to work and prove that it was worthy of the premier position, that it was not resting upon its laurels, but keen and strenuous to advance. The College possessed many advantages, not the least being that it was in London. Its first efforts must be towards the acquisition of funds. Education was the first asset of a nation—its greatest wealth; and for its improvement education had a natural claim upon the country's material wealth. It was a happy sign of the times that that principle was becoming more and more accepted. It was probable that the final authority to whom the administration of the funds for higher education would be ultimately entrusted would be the local University. The College was seeking to become affiliated to the University of London, and during the

past year a distinct and favourable advance had been made. Before affiliation was agreed to there was reason to believe that certain conditions would be insisted upon—such, for instance, as better laboratory accommodation, and it should be the aim of the College to fulfil those conditions as soon as possible. The general principle seemed to be that those who showed themselves most capable of helping themselves should be granted the greatest aid, and therefore the larger the funds raised by the College the greater the assistance it was likely to receive from the authorities.

Addressing himself more particularly to the students, the Professor laid stress upon the necessity of steady work. The surest road to success was regularity and application. Let no day pass without some work performed and some difficulty overcome. Education did not consist only in the acquirement of a number of dry facts, but in the application of those facts. The highest education was that which aimed at developing the thinking power, not that which imparted a large number of details. At first sight new students might imagine that their preliminary studies were somewhat remote from veterinary medicine, but he could assure them that there was nothing more helpful to their future career than well-grounded knowledge of chemics, physics, and biology. Those students who were returning to work after failure in the examination he advised not to be discouraged. The probability was that they had not been working in the right direction, and the remedy would be found in taking their teachers into their confidence and accepting of the help they were anxious to give.

In conclusion, Dr. BRODIE dwelt on the necessity of combining regular methodical work with regular and healthy recreation.

Sir GEORGE BROWN, an old student, whose name was entered on the College books as long ago as 1846, moved a vote of thanks to Professor Brodie for his address, and in doing so urged upon the students the necessity of taking advantage of the opportunities offered by the College, for there was no regret so keen in after life as the knowledge that valuable time had been wasted at a critical time of life. He did not share the gloomy forebodings as to the future of veterinary science, or anticapate the time when the motor car would triumph and the veterinary surgeon, like Richard III, would be crying out, "A horse, a horse, my kingdom for a horse."

ROYAL VETERINARY COLLEGE OF IRELAND.

VETERINARY SCIENCE AND ITS RELATION TO AGRICULTURE.[1]

BY E. WALLIS HOARE, F.R.C.V.S., CORK.

The commencement of a Session at a College is an event which inspires thoughts of a varying character in individuals of a philosophical turn of mind. To the student who is entering upon his studies for the first time the occasion is an anxious one; he is laying the foundation stone of his future career, the success of which is of vital importance to him, and, although fascinated by hopes of distinction and replete with good resolutions, he considers with bewilderment the number and extent of the sub-

[1] Introductory address at the opening of the Session, 1904–05 of the Royal Veterinary College of Ireland, October 5th, 1904.

jects in the curriculum. The student who has emerged from the freshman stage returns to his lectures with more confidence; he has experienced the good results of attention to his work, and profited by the instruction and advice of his teachers. If endowed with an intellect above the ordinary and stimulated by ambition, he has already gained distinction; he is anxious for further honours and aspires to more brilliant success. To the practitioner of mature years, with his experience of the glitter of success and the gloom of failure, such an occasion carries his thoughts back to his college days, and brings recollections of respected teachers, trusted companions, and familiar haunts, of distinctions won and of opportunities lost. In his reverie he sees instances of those endowed with brilliant intellects and marked capabilities who have fallen a prey to the evils of dissipation; again he sees examples of college medallists and prize-winners who, through no fault of their own, have not attained high positions in the professional world, while plodding workers of very average abilities have succeeded far beyond the expectations of their teachers and fellow-students. But in this retrospective mood more important considerations arise; he naturally ponders on the progress that his profession has made since those days; he contemplates its present position and utility, the necessity for further improvement, and the means by which this is to be attained. It is with these latter thoughts in my mind that I venture to commence this address at the opening of the present Session of the Royal Veterinary College of Ireland, being fully conscious at the same time of my inability to carry out so responsible and important a function in a manner befitting the occasion.

The most pessimistic individual must admit that favourable progress in veterinary science is an established fact in the present day. If we glance at any department in connection with the profession, although we may find much to be desired, we shall discover distinct evidences of advancement. This is accomplished by various means, and we all have our part to play in contributing thereto, some by devoting their time to scientific research, preventive medicine, and sanitary science, others by clinical observation, and by discovering new and improved methods of diagnosis and treatment. A wide field and abundant opportunities await the attention of enthusiasts, and a combination of individual efforts is necessary in order to establish important facts. Few men can prosecute scientific research and engage in private practice at the same time; but what is eminently desirable and advantageous for professional advancement is that the pathologist should work hand-in-hand with the clinician. Enthusiasm is necessary for the onward march of progress. We must not be satisfied with our present position, nor remain inactive in the "rut of every-day experience." Let us remember that "the goal of yesterday will be the starting-point of to-morrow." Contentment with the scientific knowledge of our day, and imagining that we have reached the acme of perfection, will not enable us to keep pace with kindred professions. The most destructive element to professional advancement is the common but erroneous notion that "our business is to preserve and not improve." The most prominent evidence of advancement that we possess is found in the present position of veterinary pathology and bacteriology. Progress in all departments of the profession can be traced to knowledge obtained by scientific researches into the nature and causation of diseases. When we are acquainted with the pathology of a disease its prevention and treatment are rendered more facile, rational, and effective. In former times, when the science of pathology was in its

infancy, speculative attempts at treatment were the order of the day. Preventive measures were unknown; consequently the ravages of disease extended throughout the land. Scientific investigators have suceeeded in demonstrating the actual cause of many of these fatal epizootic diseases and proved their contagious nature. The results have been that diseases which decimated herds of valuable cattle and brought ruin on their owners, are now either stamped out or kept under control. Stockowners of the present day have very little idea of the losses incurred in former times from epidemics. They do not sufficiently recognise the benefits which veterinary scientists have conferred on them by the suppression of contagious diseases, nor do they appreciate the enormous amount of time and brain-work that has been expended in conducting pathological investigations. Let us briefly consider some of the benefits which have resulted to stockowners from the labours of veterinary scientists. As a striking example we may refer to that fatal disease anthrax. Prior to the discovery of the bacillus of anthrax the losses produced by its ravages were enormous. No preventive measures were adopted, the carcases were buried in the pastures, perhaps close to streams, and with the skin removed and every facility allowed for the multiplication and vitality of the bacilli. The diagnosis of the affection was largely a matter of guesswork, and its existence was often overlooked. Contrast this with the precautions observed in the present day. By the aid of the microscope the diagnosis is rendered a matter of certainty, the carcase is carefully removed from the pasture, and either buried intact in some waste ground or burned. It has been demonstrated that by burying the carcase intact putrification sets in rapidly and the bacilli perish, whereas if air gains access to the interior, and blood escapes on the pasture, the bacilli multiply and infest the soil. But veterinary scientists have gone still further. They have discovered a system of preventive inoculation for the disease, which up to the present has given satisfactory results. That disease, known as black-quarter, has also been specially investigated, and its bacillus discovered. Preventive inoculation with a special vaccine is now largely practised with admirable results.

Turning to another very important disease, viz., tuberculosis, let us inquire what benefits scientific investigators have conferred on stockowners in this respect. They have demonstrated that the disease depends on the presence of a special bacillus, that it can be communicated from one animal to another, and they have proved that the old idea of hereditary transmission is erroneous. As the prevention of this disease is the important point, the discovery of tuberculin as a diagnostic agent has proved invaluable. There is now no excuse for owners of stock retaining suspicious cases in their herds, as by employing skilled veterinary aid a reliable diagnosis can be quickly made, and affected animals can be weeded out. And surely a disease so insidious in its development, and so disastrous in its effects, besides the risk of it being communicated to human beings, should be stamped out by every possible means. Diseases such as cattle plague, pleuro-pneumonia contagiosa, foot-and-mouth disease, have been practically stamped out in this country owing to the measures adopted by veterinary scientists. Had such been suffered to spread unchecked the industries of cattle-breeding and the rearing of stock would have been crippled, and it would have been impossible by any system of compensation for the State to recoup the owners. Of late years parasitic affections of cattle have received attention, and much valuable information

has been obtained with reference to diagnosis, prevention, and treatment. Parasitic gastritis in calves and lambs is a disease which for years caused great losses throughout the country, and it was not until the microscope revealed the presence of minute worms in the mucous membrane of the fourth division of the stomach that we were enabled to take any steps towards prevention or treatment. The researches into the pathology of that disease known as red-water in cattle, which have been carried on in the Royal Veterinary College of Ireland, will prove of vast assistance in the prevention and treatment of this affection. Time will not permit me to mention fully the benefits and advantages which the owners of stock have received from the labours of veterinary scientists, but the points to which I desire to draw particular attention are: the existence of wide fields for further inquiry, the number of diseases still awaiting investigation, and the general importance of a fully equipped Veterinary College to carry on this very necessary work. The Royal Veterinary College of Ireland has since its establishment accomplished a vast amount of useful work in this country. It is a credit to its designer, and a remarkable example of what energy, perseverance, and enthusiasm can accomplish. As members of a scientific profession we are proud of its existence, and we are sufficiently optimistic to believe that its establishment marks the era of important development in veterinary science. That its teaching staff is efficient is evidenced by the results of the examinations of its students by the Royal College of Veterinary Surgeons. To the practitioners of Ireland it has given marked assistance in the investigation of obscure diseases and in the examination of morbid specimens; indeed, I may say that its worthy Principal is ever willing to give us the benefit of his well-known skill in pathology and bacteriology, and ready to advise and assist us in unravelling the mysteries of disease. But a wider sphere can be taken by this College if it receives the support that it merits from the State. Some of the buildings still require completion, and State support is necessary for this purpose, and also to carry out experimental work in connection with diseases. Ireland is essentially an agricultural country, and such being the case, it follows that the prevention of disease in her live stock is of vital importance if prosperity is to exist. When we consider the liberal support that Continental Governments have accorded to veterinary science, the apathy with which the Government in this country regards the necessity for progress and advancement in this direction is surprising. Investigation and experimental work in veterinary science are of far-reaching importance; they have not only a direct bearing in stock-farming and agriculture, but are also concerned in the health of the nation. Such work cannot be efficiently carried out in the absence of aid from the State. The constant growth and advancement of veterinary science on the Continent is due to the munificent grants which intelligent Governments have supplied for purposes of investigation. If our Government could be persuaded to awake from its lethargic condition, and give practical proof of its acquaintance with the needs of veterinary medicine, this College would be as well equipped and as capable of conducting important investigations as any on the Continent. The teachers are quite capable and enthusiastic; there is abundance of material and unlimited opportunities. An experimental farm could be added where all varieties of diseases could be investigated, and where sera and anti-toxins could be obtained. What an advantage to students, practitioners, and stockowners such an institution would be.

The capital expended would be amply repaid by the results that would ensue. A well-equipped College is of the greatest importance with reference to post-graduate study. The practitioner who is desirous of improving his scientific knowledge, or who wishes to specialise in a certain subject, requires an institution of the nature we have indicated. The diseases of cattle in this country have not received the attention they merit, and this, combined with the ignorance and carelessness of the owners, accounts for the large mortality and losses that yearly ensue. In the course of practice we meet with instances where parasitic diseases are permitted to recur year after year, and little or no measures are adopted to either treat the animals in a rational manner or to eradicate the diseases. And this not only occurs in the case of small farmers, but is also met with in extensive stock-owners and cattle-breeders; they do not appreciate the value of professional assistance, but squander large sums of money in the purchase of patent medicines. We believe that a Veterinary College capable of investigating the diseases of cattle and sheep will have a marked influence in directing the attention of stockowners to the value of professional advice and assistance. Being aware of the existence of such an institution, they will recognise the fact that practitioners graduating therefrom will be specially competent, not only in the treatment of diseases, but also in their prevention. And few will deny the necessity for directing public attention to the importance of calling in professional aid, instead of depending on the advice of ignorant persons and on patent cure-alls. This is not to be achieved by placing within the reach of stockowners information as to the manner of treating diseases, or vaccines for their prevention, neither can amateur veterinary works nor the veterinary column of a weekly paper prove of any value to them. At the present time there is far too much amateur treatment in existence. It is a distinct advantage for stockowners to be acquainted with the elements of hygiene, and to be competent to nurse sick animals and to administer medicines. But beyond this simple knowledge it is not wise for them to go; they will find that early professional aid will prove of more value than any information obtained from lectures or papers. As veterinary surgeons we prefer to do the *preaching* as well as the *practice*, and are quite competent to give instructions to our clients in every department of our calling. Let us now briefly consider the present position of veterinary sanitary science, and the necessity for further progress therein. Preventive medicine is in reality the most important part of the veterinary surgeon's duties in the present day. The public are commencing to recognise the fact that the mere treatment of sick animals is not the only function of the practitioner. The prevention of diseases means a large saving in many respects with reference to stock, but there is also the question of suppressing those affections which are communicable from animals to man. When the members of municipal authorities are intelligent and anxious to do their duty to the public, they appoint veterinary surgeons for the inspection of meat and dairies and in connection with contagious diseases. Diseases with fatal consequences to mankind, such as glanders, rabies, and anthrax, are now kept under control, and the risks of human beings becoming infected are greatly lessened. The early diagnosis of glanders by means of mallein must be regarded as a triumph of science, as the disease can be stamped out and a source of great danger to attendants of horses thus removed. Prior to the discovery of this agent cases of glanders which did not show clinical symptoms were often over-

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looked, or were treated, the risks to the attendants being very serious. In connection with the inspection of meat and dairies, it is a matter for regret that in provincial towns and country districts such inspection, *if attempted at all*, is carried out in an indifferent manner by unqualified persons ignorant of the subject. The necessity for public abattoirs and qualified veterinary inspectors may be apparent to some of the more intelligent members of the Public Health Committees, but these are overruled by a majority. The latter consist of individuals prejudiced by imaginary trade or personal interests, and devoid of sufficient intelligence to recognise the necessity of food inspection. In some instances the unqualified inspector seizes a carcase, calls in the medical officer of health, and if the latter condemns the meat, then a magistrate has to attend and give an order for its confiscation. Now, with all due reference to the skill of a medical officer of health in his own sphere, I contend that the veterinary surgeon, by virtue of his special training, is the proper person to undertake the duties of meat inspection. In some recent meat prosecutions it was found necessary to produce a pathologist as well as the medical officer of health to the prove the presence of tuberculosis in a carcase. Surely the most economical, as well as the most efficient procedure, would be to appoint a veterinary surgeon as sole inspector, and to build a public abattoir. The inspection of dairies is, in my opinion, of greater importance than that of meat. Not only is there the danger of the transference of tuberculosis by means of the milk from cows affected with tubercular disease of the udder, but the milk may be the vehicle for conveying various kinds of infection, such as that of typhoid fever, scarlatina, &c., when such diseases exist in close proximity to the dairy. When we consider that the staple food of infants is milk, which is usually given without being sterilised, and knowing their great susceptibility to disease, it is quite clear that the most rigid inspection of dairies should be enforced, not, we would suggest, by employing individuals totally ignorant of the principles of sanitary science, and incapable of recognising tubercular disease of the udder in cows. It behoves us to impress the importance of this matter on municipal authorities on every possible occasion, and thus to assist in obtaining not only the professional posts to which we are entitled, but also a means of preventing disease in those who are unable to protect themselves. Another sphere in connection with veterinary sanitary science and hygiene is the management of large studs of horses. Here, again, preventive medicine occupies the premier position, and our advice is now largely sought with reference to the feeding and general hygiene of the animals and the construction of stables. The results of veterinary supervision in these respects have proved eminently satisfactory; diseases are prevented to a large extent, contagious affections are recognised in their early stages and promptly isolated, while a rational system of dietetics proves economical as well as advantageous. Without assuming the rôle of the prophet I venture to predict that the progress and advancement which I have indicated will be achieved in the future. It will be a process of evolution, and will require constant endeavours on the part of practitioners to plead the cause of the profession in the proper quarter on every available occasion. The advent of electric and motor traction is already producing marked effects in lessening the number of horses employed for harness and cartage work. As a result there is a marked diminution in the opportunities for city practice, and it seems very probable that in the future the

number of cart-horses will be still further reduced. Again, owing to the more rational care and management of all kinds of horses in the present day, they keep in a far healthier condition than in former times, and the number and variety of diseases are decreasing; thus the services of the veterinary surgeon are less often required. The junior practitioner will find it necessary to devote his attention very largely to preventive medicine, to the details of the rearing and management of live stock of all kinds, and must make a special study of their diseases. In order to bring about the extinction of empirics, and to prevent the evil effects of the wholesale dissemination of patent nostrums, he must impress on stockowners, not only the baneful results of quackery, but also that by virtue of special training he is fully competent and willing to treat the diseases of cattle and sheep as well as those of the horse. If we succeed in convincing stockowners on this point we shall accomplish the banishment of the village wiseacre, and curtail the gains of the patent medicine vendor. The result will be that fresh opportunities for practice will arise, obscure diseases will be investigated, the mortality in live stock will be greatly diminished, and agriculture will be rendered more profitable.

Canine practice offers a wide field for the practitioner in the present day. To a considerable extent in this country the treatment of dogs was in the hands of amateurs and fanciers, possessed with the idea that veterinary surgeons paid little attention to canine diseases, and that the employment of ancient recipes, combined with information derived from the "Veterinary Column" of sporting papers, constituted the most reliable treatment of these animals. Gradually the dog-fancier is commencing to recognise the value of professional aid in connection with the treatment of his favourites, and as a result the heroic and often fatal methods of former days are disappearing. In the treatment of dogs the sentimental value is considered of more importance than the commercial; hence it forms a speciality which will prove lucrative to the practitioner who adopts it. The process of increasing our sphere of utility is one which will require time and effort, for, in the words of Tennyson—

> "Science moves but slowly, slowly,
> Creeping on from point to point.

The question of the affiliation of existing Veterinary Colleges to Universities is an important one at present. Provided that a Veterinary Faculty is instituted, with its own professors, on the same lines as that of Medicine, Law, or Engineering; that the students of this Faculty must pass the matriculation examination of the University, and that the existing one portal system of licensing be adhered to, I think the advantages of such an affiliation must be apparent to all. The higher standard of education which a university career will demand must be productive of beneficial results in the future; while the opportunity afforded to those possessing the ability and inclination to obtain a higher degree than the licence to practise will prove a useful stimulus to post-graduate study. I shall now venture to address a few words of advice to students—and, as they are founded on my experience of being still a seeker after knowledge, and finding much to learn, I trust they may prove of some value, although some may consider them slightly draconic in character. On you, gentlemen, the veterinary surgeons of the future will devolve the duty of not only preparing yourselves for important and responsible positions, but also

by the observance of honourable and manly conduct, an unsullied career, and a spotless reputation, of maintaining the dignity of a noble profession. Do not regard examinations in the light of necessary evils, nor imagine that as you emerge successfully from the ordeal of each year's test the subjects thereof may be forgotten with impunity. In your final year and in after life you will find these subjects necessary and useful. An important point in connection with the study of any subject is that you should become thoroughly familiar with its rudiments before attempting to master it deeper portions. Above all things avoid the pernicious system of "cramming," and learning by rote or "rule of thumb." Such may succeed in obtaining marks at a written examination, but at an oral this knowledge withers like an up-rooted succulent plant before the rays of the noonday sun. When reading any subject be inquisitive without being sceptical. Endeavour to get at the why and the wherefore, and learn to glean facts as the result of your study. Do not imagine that excessive reading can accomplish any useful purpose; the mind is only able to assimilate a certain amount of information at a time, and if excesses are indulged in, metaphorically speaking, you get a form of mental dyspepsia. This occurs when you postpone reading until a few months before an examination, and the results are nauseating in the extreme. Devote special attention to the application of your knowledge to practical work. Every subject possesses a practical as well as a theoretical aspect—that is, it can be applied to the actual practice of your profession. The importance of clinical study cannot be over-estimated, the recognition of symptoms and the art of diagnosis cannot be studied theoretically. Learn to observe even the smallest details when studying clinical medicine and surgery. The faculty of observation is no doubt more highly developed in some individuals than in others, but it can be cultivated in all. Study the methods of observation adopted by Sherlock Holmes, as described in Conan Doyle's works; although the character is a fictitious one you will derive much valuable information therefrom. Remember that "we make more mistakes from not looking than not knowing." Study the appearance and habits of animals in a state of health before commencing the consideration of their diseases, and be perfectly familiar with the normal action and the formation of healthy structures in horses before attempting to diagnose lameness, or to recognise causes of unsoundness. In the present day you possess every opportunity for studying the various subjects of the curriculum and I cannot but admire the facilities that modern colleges give you to smooth the path to knowledge. But, gentlemen, remember that, however efficiently the smoothing process may be carried out, there is "no royal road to learning." Let your intellects be ever so brilliant, and your opportunities unsurpassed, you must possess application, industry, and determination if you are to be successful in your examinations, and fit to engage in the battle of life. You must be satisfied to commence at the foot of the ladder before you can attain the standard of excellence you seek for. Do not expect that by going through the form of attending lectures you will gain the requisite knowledge to pass examinations without any efforts on your own behalf. Remember that "to learn is not the passive of the verb to teach." When a student is careless or indolent, and fails to answer even simple questions, a favourite excuse given to the examiner is "that he was not taught such matters at College." Such an answer is always appreciated at its correct value, and when it is

offered we know that the student belongs to that type which "refuseth to hear the voice of the charmer, charm he never so wisely." I have already advised you to study every subject practically as well as theoretically. Books like lectures are reliable guides, but they cannot take the place of actual observation or manipulative dexterity. To rely on theoretical knowledge only is as unsatisfactory as endeavouring to find your way in a large city by means of a map. Do not over-estimate your knowledge of any subject; you will always find something new to learn, more especially after you are qualified and have to face those most severe examiners, your clients. Never be discouraged by errors or failures; they are common to all, although admitted by few. Take notes of every case you see, and compare the symptoms presented with those set forth in your text-books as diagnostic of the affection. Never neglect *post-mortem* examinations when opportunity offers, theugh they will shake your faith in diagnostic symptoms; they will tend to make you more careful and accurate in giving opinions. Do not believe too implicitly in the curative power of drugs; remember that a natural tendency exists for recovery. Recognise the fact that physiology and pathology are the foundations of medicines, and anatomy is the groundwork of surgery. Study anatomy in the dissecting room, and pay special attention to the situation and relation of structures in the regions which surgical operations are usually performed Observe surface markings and surgical landmarks, and note carefully the position of the blood-vessels and nerves that are superficially placed. Attention to neat dissection not only gives you a permanent knowledge of anatomy, but also trains the hand in the use of the scalpel, and lays the foundation for surgical dexterity. Let me advise you to infuse a little enthusiasm and ambition into your studies; do not rest satisfied with a mere pass at your examinations, but strive for distinction. Recollect that gaining high marks is not simply a personal gratification, but it will reflect honour on your college, your teachers, and your country. And when you become qualified and enter the arena of competition, and commence the struggle for existence, you must still continue your studies if you desire to do your duty towards your clients and your profession. In pursuing such a course you will meet with professional opponents of the "practical" type who will refer to you in a cynical manner as theorists and bookworms, and will not hesitate to throw out veiled hints to your best clients that you are ignorant with reference to practical work. If you have sufficient courage and determination to defy this form of opposition you will in due time be able to demonstrate that the practice of your profession requires something higher than self-confidence, dogmatism, and a faculty for concealing errors and ignorance. You will find that practitioners who have relegated their books to some dusty corner, and who boast that they never read professional literature of any kind, usually suffer from an affection known as "*Sopho mania*," which is defined as "an insane belief in one's own wisdom." There is no reason why a man cannot continue his studies; keep abreast of the times, and at the same time be a skilled practitioner. And in order to practise successfully you need not take as your ideal the wise man of the Stoics, as described by Cicero, "who is never in doubt, never suffers remorse, never makes a mistake, and never changes his mind." The path to success is steep, tortuous, and thorny, and in traversing it you may be at one time exhilarated by the fickle smile of fortune, and at another depressed by the dark gloom of failure. Some

fall by the way, as they do not possess sufficient determination to overcome the obstacles which interrupt their progress. Others fail to reach the goal; perhaps they have been the victims of adverse circumstances, or have not been endowed with that quality commonly known as tact, or have suffered from the secret stabs of jealous professional confréres. They have tried to do their duty, but failed either to satisfy the whims and vagaries of unreasonable clients or to gain the appreciation of that most exacting of taskmasters—the public. Few succeed in reaching the position they desire, and few are satisfied from a financial point of view. Others grumble at imaginary evils, lament their social status, and waste their energies in seeking that "bubble" society, and forgetting that "the fault, dear Brutus, is not in our stars, but in ourselves." In the profession you have chosen you must not expect to gain large incomes, but your social position will entirely depend on yourselves, for your opportunities for demonstrating your value to the community and gaining the respect of your clients are unlimited. And, gentlemen, whether you rise to the pinnacle of fame, or whether you remain in the rank and file, always remember that honourable conduct will contribute to the advancement of your profession and to the dignity and lustre of your calling, and at all times throughout your career keep the following passage from Shakespeare before your minds:—

> "The purest treasure mortal times afford
> Is spotless reputation; that away,
> Men are but gilded loam or painted clay."
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> . . . . . .
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> "Mine honour is my life; both grow in one;
> Take honour from me, and my life is done."

UNIVERSITY EDUCATION FOR VETERINARY STUDENTS.[1]

BY WILLIAM HUNTING, F.R.C.V.S.

GENTLEMEN—When your Secretary persuaded me to introduce a subject for consideration at your next meeting I was rash enough to accede to his wish, and to select "University Education of the Veterinary Student." I confess I have no special knowledge of University education, but I know a good deal about the training required to make veterinary students into good practitioners. And let me say at once that by good practitioners I do not mean the old-fashioned type of man who makes money, lives respectably, and ceases study on leaving college. I fully recognise that whilst every other calling shows its members to possess wider and truer knowledge than was accepted a generation back, not only of the special subject by which they earn their living but of allied subjects, we veterinarians must exhibit a wider and deeper grasp of learning than our fathers. In saying this I do not acknowledge any stagnation on the part of my profession. It is a gross libel on us to say that our teaching has been defective and that our scientific progress is belated. The men who have used this argument are men outside our ranks who are ignorant of what we have done and are doing. That we might have reached a higher standard of knowledge than we have attained is true, but that statement applies to all other

[1] Being a paper read at a meeting of the Southern Counties Veterinary Medical Association on 29th September.

callings, and is not to be accepted as demonstrating that we have not successfully striven for and attained a position quite comparable with the advance made by other callings. The question for us is—whether a new departure is likely to increase our standard of learning and usefulness more rapidly and beneficially than the course by which we have reached our present position. Every veterinary surgeon has a great interest in the question, because our future depends to a considerable extent upon the way it is answered. For good or evil a move in the direction of so-called University education has been made, and its effects will have a practical bearing upon our progress.

My only interest in the question is the same as yours—the progressive improvement of our profession. I have no fish to fry of my own, and I am not log-rolling for the interests of any person or institution. My only desire is for the advance of the Body Corporate to which I belong.

When boys leave school at fifteen or sixteen years of age the majority imagine their education is finished. If, however, their own intelligence or the compulsion of examinations suggests that further effort is desirable, there are various ways of obtaining the necessary additional knowledge. For the lad who is not obliged by rules and regulations to accept a definite course, personal application, with or without the assistance of a tutor, may suffice. Secondary education is offered by many educational institutions, and technical schools of all kinds abound. For the young man who intends entering one of the so-called learned professions or who desires higher education for its own sake there are the Universities. There was a time when it was possible for a man to master all human knowledge, and the only places at which he could attain that eminence were Universities. Now-a-days no man can hope to do more than gain a general knowledge of some things, and, perhaps, a high special knowledge of one. Specialisation has become a necessity for every one who wishes to excel. The field of learning has so expanded that to really master any branch requires specialisation. The result is that even at Universities men only attempt a limited course, and that course is specially framed for their requirements.

Some callings cannot be provided for even at Universities. Naval and military officers have their own special institutions for training. Agriculture and engineering can be taught to some extent at Universities, but no man ever yet attained eminence in either subject by mere attendance at a University.

Medicine is only successfully taught at a University by the conjunction of an infirmary, and by a course of study rigidly applied to the definite object of making men doctors. General culture can be obtained at any British University. Special culture is only obtainable at those which lay themselves out to supply it.

The present little agitation in our profession for a University education is not due to merely a yearning for higher culture. It is forced by outside influences, and it is fostered by ignorance among ourselves. A University education without a degree is in itself a desirable thing when it is real. With a degree it marks a man as having had a training superior to others—a purely literary training probably, but yet one which raises the man to a higher standard than is likely to be reached by a man who has not had the advantage of it. There is, too, an education at Universities which is not included in the course of lectures or the work of a laboratory—the education by association with cultured men. All those who enter a University

must pass a matriculation examination, which ensures that every student already possesses a mental training such as only the higher classes of our best schools supply.

To enter a University means that a man, helped perhaps by scholarships, has the training and intelligence to pass his matriculation, or that he has money enough to have enabled him to stay at a good school long enough to master the necessities of a matriculation. The mere fact of entry, then, shows either superior intelligence or money, and this fact at once confers on him some social standard.

I have a fixed idea that a good deal of the impulse in our profession for a University connection is due as much to the snobbish notion of social recognition as to the solid benefit of higher culture. I acknowledge that the possession of a University degree marks a man as an educated man, but only because it is evidence of directed study and of a knowledge attained in the special subject for which the degree is granted. In arts and literature the University degree is a definite mark. In special callings the degree is also a mark of efficiency because a definite course has been pursued and a positive standard of excellence has been attained. To have only attended some special class at a University without matriculation is of no advantage unless the teacher is an acknowledged master, and the student industrious, and if the class subject is one suited to his wants.

A University possesses, either as a result of pious founders, the munificence of patrons, or the grant of Government, such wealth that it is enabled to pay high salaries for teachers and thus secure the best men, and to supply libraries and laboratories furnished with the best material aids to study. If a University arranges its course of study specially for the requirements of its students we have the highest possibilities for attaining eminence. But all special lines of training are not supplied by Universities. The special wants for the Army and Navy, for instance, are not supplied by Universities, but by special training schools devoted entirely to the wants of their pupils. And yet Army and Navy officers are well educated. Again, agriculture and engineering are only partially provided for at Universities. If men following their calling obtain a University degree it is only by the aid of study and experience gained outside of the walls and curriculum of a University. No amount of University education would produce an expert surgeon. Surgery is an art as well as a science, and our best surgeons have not been University men. For special training a special institution is required. When a University affords special training it is of the best, but when it affords only some general training possibly closely allied, but not special, it offers no inducement to men whose calling is distinctly a specialty.

The veterinary profession is specialised. It requires knowledge not wanted and not possessed by other callings. It differs so much from the human medical profession that every one would resent the idea of a veterinarian attending a child with measles or a doctor attempting the cure of pleurisy in a horse. Not only is the practice of medicine and surgery so specialised for man and the other animals that each requires distinct and different training, but the courses of allied sciences which precede differ considerably, or should differ if their full value is to be made available.

The natural evolution of the trained veterinary surgeon started in this country with a veterinary school at Camden Town. Anatomy and pathology were for some time the only classes—conducted by one professor and

an assistant. Slowly chemistry, materia medica, and cattle pathology were added, then physiology and hygiene, and recently bacteriology. For the last forty years each subject has been taught by a specialist—not always a veterinary surgeon—but always in a class solely of veterinary students, so that the teacher might direct himself to the special wants of his class, giving due perspective and proportion to the various divisions of his subject. An unfortunate multiplicity of schools, for a small calling which cannot absorb more than one hundred additional members every year, has forced the majority of the schools to work with insufficient staffs. But through all difficulties our students have had definite courses of study carefully arranged for their special wants. For some years the starvation of our schools has been noted with grief, but it was hoped that the ordinary laws of supply and demand would some day relieve the over-pressure. Most of us looked forward to the time when only one school in each division of the kingdom would allow the survivors a financial existence and even an increased expenditure on staff and materials. Then we should have had ideal teaching for veterinary students. Three separate institutions—enough to stimulate healthy rivalry. Each institution self-contained, well equipped and specially devoted to the teaching of students and progress of veterinary science. We should have wanted no University assistance save the recognition of merit shown by the bestowal of a degree.

No University is likely to establish a staff of teachers and a faculty of veterinary science such as all Universities have formed for medical science. If every potential graduate for a veterinary diploma gave his attendance and his fees to one University it would not be sufficient inducement to form a regular faculty and a full specialised course. The only connection the veterinary or any other calling desires with a University is a course of study so arranged as to supply the best knowledge available, followed by a degree marking the standard of excellence reached by students. If we cannot find at a University the special course and the special staff we know to be requisite, we are well advised to remain attached to our own special schools. Every successful attempt to draw students away from our existing schools must of necessity mean the deflection from them of some of the financial support they are in want of to increase the value of the training now given.

If we look abroad we find veterinary schools supported by Government grants and under Government rule. Very few are attached to a University. Nearly all are self-contained instutitions, in which the teaching is directed to one thing only—the making of veterinary surgeons. The teachers in all the French Schools are veterinary surgeons, and even those who have decried veterinary science in this country will acknowledge merit in the French veterinary schools. A University connection is not necessary for our progress—a definite and special course of study is. It is far more important for us to have our students well educated than for them to think they gain by the deceptive possession of a pseudo-university connection. What is the result so far of our "University" agitation?

In London the University has arranged to grant their B.Sc. to veterinary surgeons as to engineers or agriculturists. Some of the subjects required at the examination will be those already learned at the Veterinary College.

In Dublin nothing has yet been settled, but it is proposed to offer an honorary degree to veterinary graduates who pass an examination.

In Glasgow nothing is yet arranged.

In Edinburgh it is proposed to affiliate the Dick School to the University and grant degrees to students passing an examination.

In Liverpool there is undoubtedly a veterinary school which will open next week, and which has some kind of connection with the brand-new University in that city. All University Students aiming at a degree must pass a matriculation examination, but the students for the veterinary classes are not required to matriculate. The course of lectures intended for the veterinary students are chiefly those delivered to the medical students of the University. Anatomy will be taught by a veterinary surgeon, and a professional man will lecture on veterinary medicine and surgery. This may be called University Education, and the University may have succeeded in making the term legal, but if I had sons to educate for my profession I should strictly avoid it. The peculiarity of the Liverpool University veterinary education is that half of it will be supplied by men who are not veterinarians, and that many of the classes at which veterinary students must attend are specially arranged for a different class of student.

The success of this hybrid scheme will not only be detrimental directly to veterinary science, but it will react most unfavourably on the real veterinary schools of the country. Those of our graduates who are best fitted for laboratory work and lectureships have now very small scope for their talents or opportunities for research. When half the veterinary teachers are not veterinarians some of our ablest men will find no suitable place for their efforts, and when the places are vacant men will not be obtainable.

In conclusion, I wish to say that I know I approach this subject with some prejudice. I have attempted to guard myself against error, and I confess I may be wrong, but with all the caution I can bring to bear I still find myself, as I think, logically opposed to the only University teaching so far offered us.

Real University training for veterinary students I should welcome, but the pseudo-connection which dispenses with the entrance examination demanded of all other students, and the substitution of classes only half specialised for those which in our Colleges are really specialised forces me to the conclusion that at present so-called University teaching is vastly inferior to the teaching offered by established veterinary colleges. Time will show the right.

THE POST-GRADUATE STUDENT.

Post-graduate courses of study are now provided at the Royal Veterinary College and at Manchester and Liverpool Universities. The Universities offer a post-graduate degree.

Of course all post-graduate study is good, and when a man has studied and passed an examination he naturally accepts a degree if offered him.

These University post-graduate degrees will certainly be accepted as evidence of higher attainments than are indicated by the possession of a veterinary diploma.

This is a doubtful blessing for the profession, unless the degree really marks a higher proficiency, and even then it will probably react unfavourably on M.R.C.V.S. by comparatively depreciating it.

I don't like the University connections because I fear that our inde-

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pendence is at stake. I anticipate that in course of time the University degrees will be taken by a small proportion of our graduates, and only the fact that the numbers will for some years be limited will prevent the Universities resenting the fact that their degree does not carry a licence to practise. I suppose I ought to be proud of a University connection, but I am not. I prefer the isolation, the independence, and specialisation now afforded by good schools, and one portal to the profession.

MALIGNANT TUMOUR OF THE TONGUE IN A HORSE.

BY A. W. MIDDLEHURST, M.R.C.V.S. LIVERPOOL.

On the 21st of September a bay cart gelding, the property of a firm in town, was brought to my infirmary with the following history :—

For some time past he had been losing condition, and was constantly salivating, and had some difficulty in masticating and in swallowing. These symptoms having become much aggravated, and a fœtid odour coming from his mouth, he was sent in for an opinion and advice.

On examination of his mouth I detected at the posterior part of the left side of the tongue a large tumour, which seemed to involve not only the side of the tongue, but also the soft palate posteriorly and the internal aspect of the lower jaw, and the last three molar teeth. The tumour was soft to the touch, and had several ulcers upon it, which gave forth a horrible odour. I advised that, as he was getting on in years, he be put down. Professor Williams saw the case, and made a microscopic examination, which he states reveals the tumour to have been a *myxo-sarcoma.*

MALIGNANT EPULIS IN A HORSE.

BY H. SUMNER, M.R.C.V.S., LIVERPOOL.

THE subject, a black cob, was first brought to our notice in May 1904.

We were told that about November 1903 it had been noticed that one of his incisor teeth was loose, but no special attention was paid to it.

The horse was brought to us in May of this year, when we observed there was very considerable thickening of the anterior dental pad, which contained several fistulæ.

A portion of the tumour was removed and submitted to microscopic examination by Mr. Montgomery, M.R.C.V.S. at the University Comparative Pathological Laboratory and shown to be actinomycosis.

Iodine was given internally till the animal's system was saturated, without any alteration in the tumour. Then Gram's solution of iodine was injected into two centres weekly for eight times, but the tumour increased. We then decided to inject the iodine solution every other day, but without any satisfactory result ; in fact the tumour increased and he was ultimately destroyed.

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DOURINE AND SURRA.

BY MAJOR H. T. PEASE, INDIAN CIVIL VETERINARY DEPARTMENT, PRINCIPAL, PUNJAB VETERINARY COLLEGE.

It has been stated in a recent work on Trypanosoma that bovines are not susceptible to dourine. I have on two separate occasions inoculated buffaloes with virulent blood from cases of this disease, and have in both obtained secondary swelling and cultivation of the organism at the seat of inoculation. The following is a short history of one of the cases. On July 9th, 1903, a young male buffalo was inoculated subcutaneously in the neck with 20 cubic centimetres of blood taken from the jugular vein of mare No. 1, suffering from dourine.

July 10th.—The temperature rose to 104·2° F. in the morning; the swelling at the seat of inoculation was about two inches in diameter, and hot and painful.

July 11th.—Temperature normal; swelling at seat of inoculation decreasing slightly.

July 13th.—Temperature normal; swelling at seat of inoculation slowly decreasing.

July 16th.—Temperature normal; swelling at seat of inoculation nearly gone.

July 19th.—The swelling at the seat of inoculation has somewhat increased in size, and on picking up the skin between finger and thumb a distinct thickening is felt.

July 20th.—The seat of inoculation slightly more swollen, and in blood taken from it a trypanosoma was found. Feeds well.

July 21st.—Trypanosomata present in blood from the seat of inoculation, which is thickened.

July 23rd.—Trypanosomata still present in blood from the seat of inoculation. No organisms found in blood from capillaries of the nose.

July 26th.—The seat of inoculation swelling is now 5 in. by 4 in., organism present in blood taken from it up to date. Feeds well. No trypanosoma found in blood from general circulation.

July 27th.—The swelling at the seat of inoculation is less to-day, and no organisms can be detected in the blood taken from it. No other symptoms of dourine present.

August 4th.—The swelling at the seat of inoculation has almost entirely disappeared, only thickening of the remaining.

September 29th.—There is a very slight swelling at the seat of inoculation, and in blood taken from it the organism is present. No further change. From this date up to the 6th October there has been no further swelling or organism found.

October 6th.—Inoculated on the right side of the neck with 10 c.c. of dourine blood from the general circulation of mare No. 1, suffering from dourine.

October 7th.—The swelling at the seat of the inoculation is as large as the palm of the hand, hot and painful.

October 8th.—Swelling decreasing.

October 15th.—Only slight thickening of the skin now remains. There is an urticarial eruption on the body to-day.

October 21st.—There is very slight thickening of the skin at the seat of

inoculation and an urticarial eruption on the body. Organisms were found in the blood from the seat of inoculation to-day, but no other symptoms of dourine.

October 22nd.—There is œdema at seat of inoculation, 4 in. × 3¼ in., and no organisms could be found.

October 23rd.—Œdema at seat of inoculation has slightly increased and organisms are present.

October 26th.—Œdema has now completely disappeared, and there are no symptoms.

November 3rd.—Inoculated with 100 c.c. blood taken from jugular of gelding No. 3, suffering from dourine.

November 4th.—Swelling at seat of inoculation is 9 in. × 5 in. × 1 in., tender and hot.

November 7th.—Swelling at seat of inoculation decreasing rapidly.

November 12th.—Only thickening of the skin at the seat of inoculation.

January 31st.—No further symptoms up to date.

It will be seen from this case that local symptoms, as evidenced by secondary swelling and the cultivation of the trypasonoma at the seat of inoculation, do take place in the buffalo, and it appears likely that two or three inoculations may give immunity in this animal, as 100 cc. of virulent blood inoculated on the 3rd November failed to produce any effect at all. No other symptoms of dourine were present unless we look upon the urticarial eruption which occurred on the 15th October as a symptom. No patches on the skin or swelling of the genital organs occurred. This animal never having shown any trypanosoma in the blood from the general circulation, and appearing to be now immune to dourine, it was decided to ascrtain whether it was still susceptible to surra, and it was consequently inoculated on the 2nd February 1904 with two drops of blood containing a mild virus obtained from the camel No. 87, suffering from surra.

February 14th.—There is a slight rise of temperature, and very few trypanosoma are present in the blood obtained from the ear.

February 15th.—Few organisms in the blood. Temperature 102·3°. Feeds well; no other symptoms.

February 16th.—Temperature 103° F. Trypansomata few in blood from the general circulation.

February 17th.—Temperature normal; no symptoms and no trypanosoma found.

June 16th.—No organisms have been seen in the blood from this animal since the 16th February 1904, although the temperature has been irregular, and often slightly over 103° F. It was decided therefore to ascertain whether the buffaloes' blood was still virulent 137 days after the inoculation, and for this purpose a small dog received 20 centimetres of blood taken from the jugular. Numerous trypanosomata were present in blood taken from the dog's ear on the 2nd July, sixteen days after inoculation.

This experiment also goes to prove the difference between surra and dourine.

21st May 1903.—*Sheep.*—A country ewe was inoculated in the right ear with 10 centimetres of virulent blood taken from the jugular vein of gelding No. 3, suffering from dourine. The inoculation was followed by no other symptom but swelling at the seat of inoculation, which was hot

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and tender for a few days, and then disappeared by the 28th instant. There was no rise in temperature.

June 22nd.—Again inoculated subcutaneously with 20 centimetres dourine blood taken from Kincaird, an Arab stallion, badly infected, with similar results to the first inoculation. The swelling caused by inoculation gradually disappeared, and no further symptom was found.

August 3d.—Inoculated with 20 centimetres of blood taken from the jugular vein of mare No. 1, badly infected with dourine, with similar results to above.

January 2nd, 1904.—There has been no symptom of disease up to date.

Plains goat two years old was inoculated in the same way as the above sheep, on the same dates, like quantity of virulent blood, but never developed any symptoms of dourine. It will be remembered that the goat is susceptible to surra, and the fact that it does not take dourine goes to prove that the diseases are separate and distinct.

STANDARDISATION OF DISINFECTANTS

No small controversy is being centred round the question of the standardisation of disinfectants, some manufacturers urging that any attempt to bring legislative control to bear upon the subject would be impracticable and vexatious to the trade, while others maintain that the public should be efficiently protected, if possible, by statute, against the sale of disinfectants which are practically worthless as such. For ourselves we welcome any addition to the statute which is calculated to secure to the public honest dealing, and the supply of goods which are of the nature, substance, and quality demanded. It certainly is not honest dealing to sell as a disinfectant a preparation which has no disinfectant property at all. What else does a purchaser expect to get when he asks for a disinfectant except it be a preparation which will disinfect, and which, therefore, he trusts to prevent the spread of infection and disease? The sale of substances as disinfectants which prove to have little or no germicidal efficiency at all is, indeed, a very serious matter when we come to consider the issue which hangs on the power of that substance to destroy germs. Considerable mischief might obviously be done by the false sense of security which the employment of a practically inert preparation would convey. The question doubtless presents a few difficulties as to the exact lines on which standardisation should be adopted in regard to the various kinds of preparations used for the purpose, but the real test should, of course, be based upon the power of the preparation to destroy organisms, and bacteriological schemes of examination are surely not so difficult to formulate that a standard method cannot be found and applied to the control of the sale of disinfectants. It is, at all events, only right to expect that a disinfectant preparation, having regard to its applications, should conform to a standard of bactericidal efficiency. A satisfactory and reasonable unit can surely be established.

(*The Lancet*, October 8, 1904.)

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TO OUR READERS.

We beg to announce that with the January number a series of Original Articles was commenced, from the pen of Lieut.-Colonel Nunn, on "Veterinary Toxicology." It is expected to publish these articles in book form at the conclusion of the series.

PART II.—SPECIAL TOXICOLOGY.

BY LIEUT.-COLONEL J. A. NUNN, F.R.C.V.S., F.R.S.E., C.I.E., D.S.O., BARRISTER-AT-LAW, DEPUTY DIRECTOR-GENERAL ARMY VETERINARY DEPARTMENT.

(*Continued from page* 243.)

Prognosis.—In acute mercurial poisoning the prognosis is bad, death usually taking place in from two to three days. In chronic cases removal of the cause and rational treatment usually is successful.

Treatment.—The antidotes recommended in acute gastro-enteritis are white of egg in water, milk, flour and water, linseed gruel, &c., with freshly prepared sulphide of iron or iron filings, which form an insoluble compound that is readily eliminated either by an emetic or purgative. Chlorate of potash is also useful in combating salivation.

If the accident has been caused by absorption from the skin the application must be washed off, taking care that it is done thoroughly.

In chronic poisoning, or where any quantity has been absorbed, Melsens recommends iodide of potassium, which, as with lead, forms a soluble compound that passes into the circulation and is readily eliminated in the secretions, especially the urine. Care, however, must be taken that this process is carried out gradually, for if too large a quantity of the deposited mercury is set free in the circulation acute poisoning is apt to be set up.

The various secondary complications, such as gastro-enteritis, paresis, paralysis, eczema, and cachexia, &c., must receive the classical treatment.

Chemical Analysis.—Mercury is detected in the food, vomit, fæces, urine, saliva, and milk; in acute fatal cases in the contents of the stomach and intestines, and in chronic ones in most of the parenchymatous organs, bile, and urine. The liver and kidneys more especially are the organs in which mercury is deposited.

If the suspected material is liquid Mayencon and Bergeret's method may at once be had recourse to and will save time and labour. The suspected liquid is acidulated with hydrochloric acid and a platinum wire wound round an iron nail is placed in it for about an hour. The mercury is deposited on the platinum, which is removed from the nail, washed, dried, and exposed to a current of chlorine gas. The wire is then drawn over or placed on a sheet of blotting paper impregnated with iodide of potassium and the

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spots where it has been in contact will be marked red by the mercury being changed into biniodide.

With solid material the organic matter must be first got rid of. Ogier's modification of Fresenius and Babo's process is a good one, but it is immaterial which is used, as long as it does not involve too great a degree of heat, which would volatilise the mercury. The fluid contains the mercury in the form of bichloride and is treated with sulphuretted hydrogen, which gives a white precipitate passing to yellow and finally black, insoluble in ammonia or nitric acid, but soluble in nitro-muriatic acid. The precipitate is filtered, washed, dissolved in nitro-muriatic acid, and evaporated, the residue being redissolved in distilled water and submitted to the following tests :—

1. Sulphuretted hydrogen and hydrosulphide of ammonia (in a small quantity) gives a white precipitate, turning into red, orange brown, and black, by increasing the quantity of the reagent forming mercuric sulphide.
2. Potash gives a yellowish red precipitate insoluble in excess of the reagent (mercuric oxide).
3. Ammonia gives a white precipitate (ammoniated mercury, the white precipitate of the British Pharmacopœia).
4. Iodide of potassium in small quantities gives a yellow precipitate, turning into a bright red, biniodide of mercury; it is soluble in excess of the reagent.
5. Chromate of potash gives a yellow precipitate.
6. Protochloride of tin gives a white precipitate which boiled with hydrochloric acid sets free a globule of metallic mercury. According to Schneider this test is sensitive up to 1/50,000.
7. A polished strip of copper placed in the fluid becomes coated with a grey film which takes a metallic lustre when rubbed with a cloth or wash leather. If dried and heated in a test tube mercury is given off which condenses on the cold parts of the glass. Heated to 40° Cent. with iodine it forms iodide of mercury, with the characteristic red colour when cold, turning yellow with heat.

Smithson's Method.—A slip of gold leaf is wound round a piece of copper. The mercury is deposited on the gold leaf, which is heated in a test tube as before described.

Caseneuve's Method.—This method is carried out by electrolysis on the acidulated fluid obtained by Fresenius and Babo's method. To the negative pole of the battery is attached a slip of gold foil on which the mercury is deposited; the gold foil can be tested as in either of the two above-mentioned methods.

Merget's Method.—This has been devised to detect mercury in the atmosphere. Lines or characters are traced on paper with chloride of platinum or palladium, which turns red in the presence of mercury.

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Mercury does not normally exist in the body, and if detected it must have come from some extraneous source, perhaps from medicines taken a long time ago.

Quantitative Analysis.—The globule of mercury given by protochloride of tin can be weighed, but it goes without saying that this method is only approximate of the total amount in the system.

NITRATE OF SILVER.

Accidents have taken place in the human being from a pencil of nitrate of silver being swallowed in cauterisation of the mouth and fauces, and it is quiet possible that the same might happen in veterinary practice.

Nitrate of silver undergoes decomposition in contact with the tissues, metallic silver being deposited, forming a black stain oxygen and nitric acid being set free. The mucous membrane is at first white and caseous from the formation of chloride of silver at the expense of the chlorides in them, but they rapidly change to brown or black. If administered for any length of time it will become deposited in the skin, discolouring it, also in the liver, spleen, pancreas, and bones, which undergo fatty degeneration. It is excreted chiefly by the bowels, but also in the bile and urine. There is great pain and vomiting of matter containing clots, frequently streaked with blood; 30 to 60 grains give rise to toxic effects in the dog, with convulsions and paralysis. The best antidote is salt in white of egg and water, gruel, or any form of albumen, both of which turn the nitrate of silver into an insoluble compound.

Analysis. — Organic matter must be destroyed, and the resulting fluid will contain chloride of silver in solution. This is filtered while hot and let stand for twenty-four hours, again filtered, and the residue melted in a porcelain vessel. A fragment of zinc is added, and drop by drop sulphuric acid, till the zinc is dissolved. Nitric acid is then added, and evaporated, the residue—"nitrate of silver"—is redissolved in water, which will give the following reaction :—

1. A dirty yellow precipitate is given, with ammonia soluble in excess.
2. Hydrochloric acid gives a white flocculent precipitate that turns black, insoluble in nitric acid ; soluble in ammonia, and partly so in hot water.
3. Sulphuretted hydrogen gives a black precipitate.
4. Arsenate of soda gives a brown or brick red precipitate.
5. Yellow chromate of potash gives a blood red precipitate.
6. Arsenate of soda, a yellow precipitate
7. Phosphate of soda, do.
8. Iodide of potassium, do.

BARIUM.

The salts of barium have toxic properties, and, several being used in manufactures and arts, are the cause of accidents, nitrate and chlorate in giving a green colour to fireworks, oxide and carbonate in glassmaking, chromate in paint, and white powders are adulterated with the sulphate. The chloride is used in certain processes in wood staining, and also in medicine in the treatment of bowel obstruction intravenously. The chloride and nitrate are soluble. The carbonate is rendered soluble by the gastric fluids, but the sulphate is insoluble. Carbonate is used sometimes in rat paste, and Christison mentions a case of cattle being poisoned by it. Orfila poisoned dogs with four grammes, and Husard and Debiron horses in five days by daily doses of 5 grammes of the chloride.

The use of barium chloride in an intravenous injection in the treatment of colic, was first recommended by Dickerhoff, and has come extensively into use, no doubt partly on account of its low price compared with eserine and pilocarpine, but it is not unattended with danger if employed rashly.

The barium salts appear to be irritants with a special action on the nervous system, and when introduced into the circulation cause rapid diminution in the contractility of the muscles. If continued for any length of time the poison is deposited in the various organs of the body, but principally the bones.

Symptoms.—When swallowed they are all the usual ones of acute gastro-enteritis, with diarrhœa, colic, and emesis in animals capable of vomiting, with great prostration, and diminution in the number and intensity of the heart-beats. The animal staggers about, has great difficulty in standing, and is unable to control his movements. The hind quarters are paralysed, which gradually extends to the rest of the body, the pulse is small and imperceptible, respiration difficult, and death from failure of the heart's action and asphyxia takes place. Administered hypodermically it causes toxic and clonic convulsions, increased peristaltic action of the bowels, with discharge of fæces and urine, emesis in animals that can vomit, restlesness, muscular prostration, quick shallow respiration, weak thready pulse, coma, and death.

Treatment.—Sulphate of soda or magnesia are the best antidotes, but carbonate of soda, which is more easily obtainable, can be used, or even wood ashes, which contain a large quantity of carbonates. The poison should be eliminated by purgatives and emetics, with opium and mucilaginous fluids.

When injected into the circulation stimulants and excitants are indicated, especially such as also cause diuresis. Certain Continental writers have in the human being recommended artificial respiration and inhalation of oxygen, which Toepper's apparatus would bring within the reach of the veterinary surgeon.

Lesions.—These vary according to the nature of the compound taken and dose. There is inflammation of the anterior portion of the

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digestive canal, chiefly the stomach, but it is not characteristic or very pronounced, and ulceration or corrosion are absent. There is congestion of the lungs, kidneys, and sometimes the brain and meninges.

Analysis. — The food, fæces, and vomited matter can be examined if the patient lives ; in a fatal case the contents of the stomach and intestines, urine, and liver.

The organic matter can be destroyed by incineration, when phosphates, chlorides, bromides, and iodides will be detected as such in the charcoal. Sulphates will be turned into sulphides.

The charcoal is treated with hydrochloric acid, which dissolves most of the barium.

When Flandin and Danger's process has been used the barium will be present in the charcoal as a sulphate. This is fixed with carbonate of soda and potash, treated with boiling water and hydrochloric acid which converts the carbonate of barium into a soluble chloride.

The solution obtained, from whichever process is employed gives the following reactions :—

1. With chromate of potash a clear yellow precipitate is given, soluble in nitric acid. With this test lime salts give no precipitate, and strontium only a feeble one.
2. Sulphuric acid gives a precipitate insoluble in water or acids. Those given by strontium and calcium are soluble in water, the former in the proportion of $\frac{1}{4000}$, the latter $\frac{1}{333}$.

ALKALINE METALS.

Potash and soda are the two most important metals to be considered of this class. They are found under normal conditions in the tissues, sodium almost exclusively in the fluids, potassium in the solids of the body. Their toxic properties differ not only as to the amount that can be tolerated, but in the effects produced, potassium being much more active than sodium.

The nature of the substances with which they are combined greatly modifies their action, some rendering them almost harmless, others having almost a corrosive action. In some cases it is the metal only that has a toxic action, in others it is the acid. Again some may be taken in large quantities without harm, but become poisonous when absorbed, and the normal amount in the organism brought to too high a proportion.

CAUSTIC ALKALIES, POTASH, SODA, AND ALKALINE CARBONATES.

The hydroxides, caustic soda and potash, are the two principal poisons that come under this class. Commercial soda and potash are carbonates of variable degrees of purity, and it is necessary to distinguish between the neutral carbonates and the bicarbonates.

Poisoning by all these agents is always accidental. Freidberger

and Fröhner mention its taking place in dogs from lapping alkaline lye, which Law states is lethal to the dog in 5-grain doses intravenously, and M. Curot from the use of beetroot molasses as food, which practice is coming more into use owing to means having been discovered to make it portable in the form of "molassine" and other compounds. Beetroot molasses contains a considerable proportion of soda and potash, and if an excessive amount is given it will give rise to poisoning.

The effects of soda and potash are due to their toxic properties; therefore it depends on the degree of concentration they are in when taken, and this also explains why the hydroxides are more active than the carbonates. They are liquefying caustics, removing water from the tissues, altering albuminoids and saponifying fats, the whole structure with which they come into contact being turned into a soft pultaceous mass.

Symptoms.—Poisoning by caustic alkalies causes great pain on account of the terminal filaments of the nerves being exposed by the desquamation and liquefaction of the mucous membrane. There is violent gastro-enteritis, with stomatitis and pharyngitis, and high temperature, salivation sometimes tinged with blood, difficulty in swallowing and vomiting, unquenchable thirst, and when the œsophagus is pressed manifestations of pain. The abdomen is sensitive on pressure, with colicky pains and diarrhœa, the fæces being tinged with blood, and towards the end containing shreds of mucous membrane. The patient sinks into a state of collapse, the temperature falls, and death takes place.

Treatment.—Acid fluids, such as vinegar and water, lime juice, or dilute sulphuric or hydrochloric acids should be given, together with emollient fluids, linseed gruel, white of egg, and oleaginous purgatives. The fever and the caustic effects of the alkali must be treated in the usual manner.

Post-mortem.—The lesions consist of inflammation and softening of the tissues of the upper part of the digestive canal, the lips, tongue, pharynx, stomach, and a considerable portion of the intestine being implicated. The tissues of all these organs ase infiltrated, softened, and of a red colour, the walls of the stomach frequently being perforated. If death does not take place at once the animal may live for some time, but is affected with chronic gastro-intestinal catarrh, and contraction of the intestines and œsophagus, especially the latter.

Analysis.—Usually the action of the suspected materials on litmus paper is sufficient. If, however, it is necessary to make a more elaborate analysis, the materials can be macerated in water and filtered, the filtrate submitted to the following tests:—

1. Carbonates will effervesce with an acid.
2. To distinguish between sodium and potassium. If there is a considerable quantity of potassium in the filtrate a white crystalline precipitate will be given with tartaric acid and sulphate of ammonia.

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3. If potash is present, chloride of platinum or picric acid will give a yellow precipitate.
4. If soda is present there will be no precipitate given by these, but a brown crystalline precipitate will be given, with bi-antimonate of potash. This is a characteristic reaction if there is only potash and sodium in the solution.
5. By the blow-pipe, soda will give a yellow and potash a blue flame.

AMMONIA.

Liquid ammonia, which is a solution of ammonia gas in water, is the form that most commonly gives rise to accidents, although the carbonate, chloride, and acetate are all poisonous if taken in too large quantities. Ammonia poisoning is always accidental, usually due to too large quantities being given by ignorant persons for medicinal purposes, and the majority of cases are seen in the ox, liquid ammonia being a favourite remedy in cases of tympanitis.

All the ammonia compounds are both absorbed and eliminated rapidly, and their toxic action is chiefly dependent on the local lesions, coupled with excitation of the nervous centres, and alteration in the red blood corpuscles. The degree of toxity depends on the dose taken and how much it is concentrated.

The toxic dose is not accurately determined, but the following are what are given by various authors on the subject :—

LIQUID AMMONIA.

Hertwig—	Horse, . .	32 grammes.
	Ox, . . .	70 „
	Dog, . .	2 „
Law—	Horse, . .	1 oz.
	Ox, . . .	2 oz.
	Dog, . .	½ drachm.

Finlay Dun found that half an ounce diluted had no ill effect on the horse, but one ounce was fatal in sixteen hours and three ounces in fifty minutes. In the dog half a drachm retained in the stomach was fatal in twenty-four hours.

Carbonate of Ammonia.—Orfila found 2½ drachms fatal to the dog. Kauffman gives it at eight grammes for the horse, ten for the dog.

Chloride of ammonia—	Dog,	6 grammes subcutaneously.
	Dog,	8 grammes by the month.
	Sheep,	25 to 80 grammes.
	Horse,	500 grammes.—Hertwig.
	Horse,	2 oz.
	Dog,	2 drachms.—Moiroud.

These quantities must be accepted with some reservations, as they are not invariably poisonous, their action depending on their caustic properties, and this in its turn on the condition of the intestines and their contents.

Symptoms.—Are much the same as those produced by any of the other caustic alkalies, but in many cases they are complicated by the respiratory organs being implicated; also more or less well-marked vertigo and delirium, caused by the action of the absorbed ammonia on the central nervous system. In some cases death takes place suddenly from abstraction of water from the tissues and cauterisation of the fauces, larynx, and bronchial tubes; in others it is later, from gastro-enteritis. There is great distress, salivation, inability to swallow, and the tongue is swollen and protruding from the mouth. There is a cough, which is not present in poisoning with potash and soda, also a smell of ammonia, the pulse and respirations are quickened, and muscular tremors are seen. If the case is not at once fatal diarrhœa sets in, and those animals capable vomit. If the animal has been exposed to the fumes of strong ammonia there is violent coughing, secretion of tears, sneezing, salivation, and spasmodic contraction of the muscles of respiration, causing dyspnœa and convulsions. If death does not take place croupal inflammation and partial necrosis of the conjunctival, buccal, pharyngeal, and bronchial mucous membrane supervenes.

Treatment.—Any acid is an antidote, but if the stronger ones are given, such as sulphuric or nitric, they must be largely diluted. Mucilaginous drinks, like linseed gruel or white of egg in water, are indicated, with anodynes. If there is danger of asphyxia from œdema of the larynx tracheotomy should be at once performed.

Post-Mortem.—Ammonia being a liquefying caustic the lesions produced are much the same as those caused by caustic soda or potash. Being volatile, it often affects the respiratory organs, giving rise to inflammation of a croupus nature and hæmorrhagic extravasations over the course of the larynx, trachea, and bronchial tubes. It should be noticed that ammonia is characterised by a tendency to form pseudo-membranes as a secondary result. When ammonia is absorbed into the blood it is at first a dark red, but as the red globules become disintegrated it becomes almost black.

The effects produced are, first, deoxidation followed by disintegration of the red blood corpuscles and dissolution of the hæmoglobine, which is transformed into hæmatin. The albumen in the blood combines with the ammonia, forming an ammoniacal albuminate which keeps it fluid.

The local lesions seen in the tissues that ammonia comes in contact with are caused by its liquefying and caustic properties, the structures being disorganised by the loss of water abstracted from them. The cell eliments, both epithelial and epidermic, are dissolved, albuminoids liquefied, and fats saponified, the resulting

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eschar being soft, pultaceous, and grey in colour, but brown if there is any blood present in the tissue.

Analysis.—This should be carried out as soon as possible on the contents of the stomach and intestines and vomited matter. They are made into an emulsion with water and distilled, the free ammonia being passed over in the distillate, which will give the following reactions:—

1. The characteristic smell of ammonia.
2. Turns red litmus paper blue.
3. Gives a white precipitate with mercuric and a black with mercurous salts.

If the ammonia is not free, which in many cases takes place from the action of the acids of the stomach on it, Dragendorff recommends that to the fluid material should be added an equal volume of alcohol and a quarter volume of milk of lime, the whole being left to stand for a few hours. It is then distilled and the distillate treated as above described.

It should be remembered that ammonia is naturally formed during the processes of digestion and putrefaction; also according to MM. Hugounenq and Laccassagne in cases of poisoning by hydrocyanic acid, which decomposes very quickly in the stomach.

II.—Salts of Potassium and Sodium.

1.—Nitrate of Potash.

The poisonous effects of nitrate of potash take place both from the metal and acid base, and when taken in a very concentrated form from the resulting gastro-enteritis.

In veterinary medicine accidents usually are caused by its being given for medicinal purposes, either in too concentrated a form in an excessive dose or in mistake for something else. Small animals, especially lambs, are occasionally poisoned from licking walls on which there is a saline efflorescence, which contains a considerable quantity of nitrate of potash.

In addition to its local irritant action it causes paralysis of the spinal cord, and gives rise to muscular weakness, commencing in the hind quarters, with convulsions, and diminution of the force and frequency of the heart-beats; it also gives rise to alteration in the constituency of the blood.

The toxic dose of nitrate of potash has not been accurately determined. Kauffman gives it as—

Ox,	. .	200 grammes.	
Sheep,	. .	25 „	
Dog,	. .	5 „	to 0·02 grammes per

kilogramme of live weight.

Morton gave a horse 2 lbs. in 6 lbs. of water without any toxic effects.—*Veterinarian*, 1887. Moiroud, however, found that half a pound to a horse and 2 to 3 drachms to dogs caused fatal results in twenty-four hours; Huzard, that three doses of 16 ozs. each, at intervals of eight days, killed a horse, and 5 to 6 ozs. cattle, but there is no doubt that under certain conditions Kauffman's doses are too high.

Symptoms.—If the quantity taken is large, symptoms of gastro-enteritis appear, colicky pains, nausea, salivation, vomiting, and diarrhœa, which are complicated with those systemic ones due from the absorption of the poison, viz., weakness, the animal tottering in his gait, swaying from side to side when standing, and sometimes falling down if made to move, with violent spasmodic contractions of certain groups of muscles. The contractions of the heart are fluttering and weak and the circulation sluggish, as is shown by the blue congested appearance of the mucous membranes, respiration is difficult and laboured, and the temperature gradually falls. The secretion of urine at first is above the normal, but decreases in ratio with the rate of circulation and often contains blood. Death takes place in a few hours and indeed often quite suddenly.

Treatment.—The poison retained in the stomach and intestines should be eliminated by an emetic or oleaginous purgative. Alcoholic stimulants are indicated, not only to sustain the vital force, but to overcome the suppression of urine that always exists. Mucilaginous and demulcent drinks should be given and stimulant applications used to the skin and extremities with smart friction, the body being warmly clothed to promote circulation. If at hand galvanism is highly recommended.

Post-Mortem.—The local effects are more or less well-marked gastro-enteritis, especially in the stomach and small intestines, the mucous membrane of which is of a bright red, purple, or brown, with patches of ulceration and exudation of blood. The bladder is congested with patches of ecchymosis and usually contains bloody urine, and the kidneys are congested, also most of the other organs, which can be explained by the feebleness and stagnation of the circulation. The blood does not coagulate, and the red corpuscles are broken down and in many instances completely destroyed.

Analysis.—This is described with that of nitrate of soda.

2.—NITRATE OF SODA.

Nitrate of soda, under the designation of "Chili nitrate," is largely used in agriculture as a fertiliser, and although not so poisonous as nitrate of potash, it frequently causes accidents, usually in cattle, but cases are recorded in the horse, sheep, and poultry, usually from its being used as manure, but also through its being mistaken for common salt.

Rossignal points out that some years ago poisoning was very common in cattle and sheep in France, caused by the animals drink-

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ing the water in which manure sacks had been washed, and bringing on gastro-enteritis. Nowadays this is done in tubs and the water thrown on the manure heap; none of the nitrate is lost, and the animals are protected. They also will lick and chew the sacks if they can get access to them, and poultry will pick up the crystals dropped about the farm. A case is reported in the *Veterinarian*, September 1876, of animals being poisoned through grazing on land that had been top-dressed with Chili nitrate. M. E. Curot points out that in the system of feeding on beetroot molasses, that is common on the Continent, and which is coming into use in England through methods having been invented to render the molasses portable, that poisoning from nitrates of soda and potash may take place, as both salts are contained in beetroot molasses. He however mentions that extremely large quantities of molasses would have to be given to the animals, and that if reasonable precautions are taken there is no fear of accidents. There are several preparations of both cane and beetroot molasses on the market under the names of "Molasscuit" "Molassine," &c. The poisonous effects are not so great as nitrate of potash. Lenghen noticed them in horses that had taken ¾ of a kilogramme in 15 litres of water, and 150 grammes in water poisoned sheep. These doses however, appear to be excessive and, Jules Chapuis reports fatal results in sheep that had taken 100 grammes; Fröhner, with 3·9 grammes per kilogramme of live weight in the rabbit. It has been stated that when nitrate of soda and potassium are introduced into the blood that the oxygen is set free and exerts a toxic action. The violence of both these salts as poisons is less when the stomach is full than when it is empty.

Symptoms.—Symptoms appear in the horse in about two hours and in cattle a little later, being the usual ones of gastro-intestinal enteritis, uneasiness, muscular spasms and retraction of the eye-ball, colic, thirst, and diarrhœa, the fæces being mingled with blood. Usually the animal remains down with the eyes closed in a state of coma. The pulse is small, quick, and weak, the temperature low; at first there is polyuria; afterwards the urine is scanty in quantity, convulsions set in, and death takes place rapidly. In poultry there is gastro-enteritis, diarrhœa, great weakness, and low temperature, the comb turns a blue or leaden colour, and the feathers all stand up on end.

Treatment. — Large quantities of milk or other demulcents should be given with oleaginous purgatives; strong black coffee and alcohol are recommended as stimulants and diuretics by Continental authorities, with grooming and stimulant applications, to the body and limbs. If the circulation gets very stagnant bleeding may be had recourse to.

Post-Mortem.—Like nitrate of potash the lesions are those of gastro-enteritis. The membrane of the small intestine, stomach, and in cattle the abomasum in particular, is much inflamed varying from bright red to purple or brown, and in places there may be

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superficial ulceration. The stomach and intestines contain a quantity of red or brown fluid, all the abdominal viscera are congested, and there are patches of hemorrhage on the membrane of the bladder and kidneys. The blood does not coagulate and is of a bright red colour.

Chemical Analysis.—This can be carried out on the suspected food or contents of the stomach and intestines. The salts can be dissolved out by treating them with distilled water, and then crystallising it by evaporation and submitting it to the following tests:—

I. With strong sulphuric acid it forms nitric acid, giving a brown colour with salts of iron.

II. A boiling solution of sulphate of indigo acidulated with hydrochloric acid is decolorised. This reaction is extremely sensitive.

3.—SALT AND BRINE.

Given in large quantities common salt has poisonous properties which may manifest themselves when given as a medicine by ignorant persons, salt being a popular domestic remedy. Large quantities are sometimes given to cattle before sales to make them drink and improve their looks. Usually pigs, cattle, and poultry are the victims. A case is reported in the *Veterinarian* of December 1871 of a number of pigs being poisoned from licking salt from the sides of a railway truck; and in the same publication, April 1865, of the same with calves. Salt is not poisonous unless taken in large quantities in a solid or very concentrated form, when it acts as a local irritant, causing gastro-enteritis. It is quickly absorbed, and eliminated principally by the kidneys. When absorbed into the blood it appears to exert a special action, but what it precisely is has not yet been determined.

Cases of poisoning from brine are fairly common in pigs and dogs, either from eating salt kitchen wash, or from its being given medicinally. In parts of Holland herring brine is a popular domestic remedy. Brine in addition to salt contains nitrate of potash, and no doubt certain toxines are formed during the process of salting the food, which accounts for the difference in its action to that of salt, especially on the nervous system. Reynal has shown that brine becomes more poisonous with age, that which had been kept for six years being three times as virulent as freshly made. He also noticed that its toxic properties were increased if the meat was rancid, and that they were preserved when the brine was mixed with the food.

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Notes and News.

TRAUMATOL.

We have recently made frequent use of "Traumatol" and found it in all its preparations a most useful, economical, and effective disinfectant.

EPIZOOTIC LYMPHANGITIS.

Captain Pallin, F.R.C.V.S., has brought out a second edition of his book on the above disease, and has added considerably to the subject-matter, with which we hope to deal next month.

The above illustrations show the "Reliance" Tooth Rasp, which is manufactured by Messrs. Arnold & Sons, of West Smithfield, only with some improvements made at my suggestion, which now makes it a most perfect rasp. Instead of the old fastening, which projected and caught the teeth when in use, a flush screw joint is used, and is so arranged that by a few turns only one-half of the upper part of the frame comes out, thus enabling one to change the plates quickly. Again the plate is made curved instead of straight, and the joint at the end of the frame which received the plate is made flat and the top rounded, so that there is no possibility of lacerating the gums of restive horses during the operation.

H. Thomson, C.B.,
Major-General, Director-General Army Veterinary Department.

Communications, Books, Journals, &c., Received.

Agricultural Journal (Cape of Good Hope); Berliner Thierärztliche Wochenschrift; La Clinica Veterinaria (Milan); Deutsche Thierärztliche Wochenschrift; Tannoform in Veterinary Medicine (March); The Sanitary Journal; Scottish Medical and Surgical Journal; Veterinary Record; La Riforma Veterinaria; Le Mois Scientifique (Paris); L'Echo Vétérinaire (Liège); Annales de Médecine Vétérinaire (Brussels); Johns Hopkins Hospital Reports; Journal of Comparative Medicine and Veterinary Archives; Recueil de Médecine Vétérinaire; Gazette Médicale de Paris; Modern Medicine; Johns Hopkins Hospital Bulletin; Il Veterinario di Campagna (Moncalleri); Le Bulletin Vétérinaire (Orleans); Revista de Medicina Veterinaria (Bucarist); La Revista Veterinaria (Buenos Aires); Zeitschrift für Fleisch und Milchhygiene (Berlin); Buletinul Societatii de Sciinte diu Bucuresci-Romania; The Meat Trades Journal; The Dental Record.

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